UNIVERSITY OF SOUTHERN CALIFORNIA

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TABLES OF IMPEDANCE FUNCTIONS AND INPUT MOTIONS FOR RECTANGULAR FOUNDATIONS

by

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ABSTRACT

Numerical values for the functions which characterize the dynamic response of rigid rectangular foundations excited by external forces and moments, and by horizontally incident SH- and Rayleigh waves are presented. The rigid rectangular foundations are assumed to be massless and perfectly bonded to a uniform viscoelastic half-space. The numerical results cover a wide frequency range and foundations with different aspect ratios. The effects of Poisson's ratio and hysteretic damping constant on the results are described.

INTRODUCTION

A complete analysis of the dynamic interaction between structures and the soil under seismic excitation requires a detailed understanding of the dynamic response of the foundation when excited by external forces and different types of seismic waves. The response of foundations to external forces also plays an important role in the design of machine foundations and in the analysis of soil-structure interaction under wind loads.

The response of rigid foundations excited by harmonic external forces and moments can be characterized by the impedance or dynamic stiffness matrix for the foundation, or, by its inverse, the compliance or dynamic flexibility matrix. The impedance and compliance matrices depend on the frequency of the excitation, the geometry of foundation and the properties of the underlying soil deposit. The evaluation of the impedance or compliance functions for rigid circular foundations and two-dimensional strip footings has been the subject of numerous investigations in the last 40 years. A complete list of references up to 1975 may be found in Ref. [1]. In the case of circular and strip foundations the resulting mixed boundary-value problem may be reduced by standard techniques to the solution of Fredholm integral equations [2, 3, 4, 5]. For more complex foundation geometries the problem has been approximately solved by defining an equivalent circular base, or by assuming a certain stress distribution on the contact between the foundation and the soil. This last approach has been used by Thomson and Kobori to obtain the compliance functions for rectangular foundations [6].

In recent years the authors have developed a method that permits the evaluation of the impedance or compliance functions for flat rigid foundations of arbitrary shape placed on the surface of an elastic half-space [1, 7, 8]. The method is based on dividing the contact area between the foundation and the soil into a number of sub-regions and in assuming that the contact tractions within each area are uniform but of unknown amplitude. Evaluating the displacements generated by the uniform tractions in each of the sub-regions and invoking the displacement boundary conditions leads to a discrete variational problem in terms of the unknown tractions. Once the contact tractions have been obtained by solving the variational problem, the total forces and moments acting on the foundation may be computed, leading to the desired impedance matrix for the foundation. This approach corresponds to an extension of the works of Lysmer [9], in which the vertical compliance for a rigid circular foundation was evaluated by considering several uniformly loaded concentric rings, and of Elorduy et al [10], where the contact tractions within each sub-region were replaced by concentrated loads.

With the recent development of an efficient technique to evaluate the dynamic Green functions for layered viscoelastic media [11] the procedure just described may be used to obtain the impedance functions of flat rigid foundations of arbitrary shape supported on a multilayered viscoelastic half-space. A first objective of this report is to present tables of numerical values for the impedance functions of rigid massless rectangular foundations perfectly bonded to a uniform viscoelastic half-space. The results presented cover a wide frequency range for foundations with various length to width ratios supported on soils characterized by different Poisson's ratios and material damping constants.

Most studies of the interaction between structures and the soil during earthquakes are based on the assumption of vertically incident seismic waves. In the case of flat foundations this assumption introduces significant simplifications in the analysis since the motion of the foundation in absence of the superstructure can be easily obtained by considering the total reflection of the plane vertically incident seismic waves on the surface of the half-space. Although the common practice is based on the assumption of vertically incident waves a number of theoretical considerations as well as analyses of strong motion records [12, 13] indicate that nonvertically incident waves, and, in particular, surface waves may have an important contribution to the total motion recorded at a site. Under such circumstances, it becomes important to study the effects of nonvertically incident waves.

The second objective of this report is to present tables of numerical values for the response of rigid massless rectangular foundations bonded to a uniform elastic half-space and excited by horizontally incident shear waves and surface Rayleigh waves. Results over a wide frequency range are presented for waves impinging on rectangular foundations with different length to width ratios from two orthogonal horizontal directions. The response of a rigid massless foundation to an incident seismic wave is designated here as foundation input motion since it plays the role of input motion for the complete soil-structure interaction problem when the mass of the foundation and the effects of the superstructure are taken into account. In the case of nonvertically incident waves the foundation input motion includes translations and rotations as opposed to the case of vertically incident waves in which the foundation input motion includes only translations.

While a large number of publications dealing with the dynamic response of rigid foundations to external forces has appeared in the literature comparetively few studies have been conducted on the related problem of determining the response of rigid foundations to seismic waves. A transient solution for the diffraction of an incident wave by a smooth rigid strip in contact with an elastic half-space has been presented by Flitman [14]. The corresponding harmonic problem under bonded conditions has been studied by Oien [15]. Luco [16], Trifunac [17], Wong [1], Wong and Trifunac [18], Thau and Umek [19, 20] and Dravinski and Thau [21, 22] have studied the response of two-dimensional rigid foundations embedded in an elastic half-space and excited by plane seismic waves. Kobori et al [23, 24] have analyzed the vibrations of a rigid circular foundation subjected to nonvertically incident plane waves. Studies of the torsional response of a rigid circular foundation, a hemispherical and a semi-ellipsoidal foundation excited by obliquely incident SH waves has been presented by Luco [25, 26] and by Apsel and Luco [27]. Tani et al [28], Iguchi [29] and Scanlan [30] have obtained approximate values for the response of rigid rectangular foundations to nonvertically incident waves. Finally, the authors [1, 31, 32] have studied the motion of a rigid rectangular foundation bonded to an elastic half-space and excited by obliquely incident P, SV, SH and Rayleigh waves. The results obtained indicate that nonvertically incident SH waves generate a marked torsional response, while nonvertically incident P, SV and Rayleigh waves cause a considerable amount of rocking of the foundation. In the case of flat foundations, these components of motion are not excited by vertically incident waves. Nonvertically incident waves also cause a marked reduction of the translational response at high frequencies.

The impedance functions and the foundation input motion for a particular type of wave provide a complete characterization of the foundation response [31], and, when used together with a model of the superstructure, permit the detailed analysis of the interaction between the structure and the soil for that particular type of seismic excitation [8, 33, 34].

The numerical results presented in this report have been obtained by use of the computer program CLASSI (Continuum Linear Analysis of Soil-structure Interaction [8]). This program has the capability of evaluating the dynamic response of flat rigid foundations of arbitrary shape supported on a multilayered viscoelastic half-space. Tables of impedance functions for rectangular foundations supported on various types of layered media will be presented in a subsequent report.

SYSTEM AND BASIC EQUATIONS

The system considered in this report is illustrated in Fig. 1. It consists of a rigid massless rectangular foundation of length 2B and width 2C ($|x_1| < B$, $|x_2| < C$, $x_3 = 0$) bonded to a uniform isotropic viscoelastic half-space ($x_3 < 0$). The viscoelastic half-space is characterized by the shear modulus G, density ρ, Poisson's ratio ν and hysteretic damping ratio ξ. Attenuation has been introduced in this case by considering a complex shear modulus $G^* = G(1 + 2i\xi)$ and by keeping the Poisson's ratio ν real.

It is convenient to consider first the case in which the foundation is excited by external forces and moments in absence of seismic excitation. The resultant of the harmonic external forces acting on the foundation may be represented by the vector $(F_1, F_2, F_3)e^{i\omega t}$, while the resultant moment about the center of the rectangular foundation is represented by $(M_1, M_2, M_3)e^{i\omega t}$, ω denoting the frequency of the harmonic excitation. The response of the rigid massless foundation to these forces and moments can be described by the motion $(U_1, U_2, U_3)e^{i\omega t}$ of the center of the foundation and by the rotation vector $(\varphi_1, \varphi_2, \varphi_3)e^{i\omega t}$. The sign convention of the different components is illustrated in Fig. 1.

The relationship between the external forces and the motion of the foundation may be expressed in the form

$$\{F\} = [K]\{U\} \tag{1}$$

where [K] is the foundation impedance matrix,

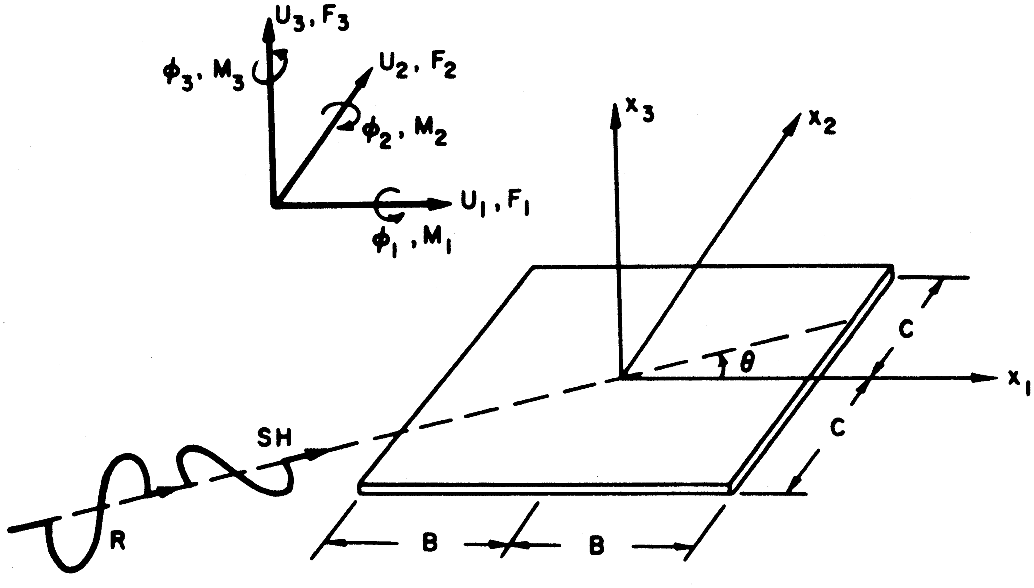

Figure 1 Description of the System.

$$\{F\} = (F_1, F_2, F_3, M_1/L, M_2/L, M_3/L)^T \qquad (2)$$

is the vector of generalized forces, and

$$\{U\} = (U_1, U_2, U_3, L\varphi_1, L\varphi_2, L\varphi_3)^T \qquad (3)$$

is the vector of generalized displacements. The length of reference L is defined here as the radius of a circular foundation of area equal to that of the rectangular foundation, i.e.,

$$L = (4BC/\pi)^{\frac{1}{2}} . \qquad (4)$$

Because of the symmetry of the rectangular foundation, the impedance matrix reduces in this case to the symmetric matrix

$$[K] = GL \begin{bmatrix} K_{11} & 0 & 0 & 0 & K_{15} & 0 \\ 0 & K_{22} & 0 & K_{24} & 0 & 0 \\ 0 & 0 & K_{33} & 0 & 0 & 0 \\ 0 & K_{42} & 0 & K_{44} & 0 & 0 \\ K_{51} & 0 & 0 & 0 & K_{55} & 0 \\ 0 & 0 & 0 & 0 & 0 & K_{66} \end{bmatrix} \qquad (5)$$

where the coupling terms $K_{51} = K_{15}$ and $K_{42} = K_{24}$. The elements K_{ij} of the impedance matrix are complex and depend on the length to width ratio B/C of the foundation, on the Poisson's ratio ν and the damping constant ξ for the soil, and, on the dimensionless frequency $A_o = \omega L/\beta$, where $\beta = (G/\rho)^{\frac{1}{2}}$ is the shear wave velocity in the supporting medium. Some of the most important characteristics of the impedance functions for rectangular foundations are presented in the following section.

As to the response of rectangular foundations to seismic waves, two types of seismic excitation are considered in this report. The first type corresponds to horizontally propagating SH waves impinging on the foundation with angle θ as shown in Fig. 1. The free-field motion, i.e., the motion of the soil in absence of the rigid foundation, is represented in this case by

$$\begin{Bmatrix} u_1(x_1, x_2, 0) \\ u_2(x_1, x_2, 0) \\ u_3(x_1, x_2, 0) \end{Bmatrix} = \begin{Bmatrix} -A \sin\theta \\ A\cos\theta \\ 0 \end{Bmatrix} \exp\{i\omega[t - (x_1 \cos\theta + x_2 \sin\theta)/\beta]\} \quad , \quad (6)$$

where A is the amplitude of the motion of the soil surface.

The second type of seismic excitation corresponds to a Rayleigh surface wave impinging on the foundation along the direction defined by the angle θ as shown in Fig. 1. The free-field motion on the soil surface for Rayleigh waves is given by

$$\begin{Bmatrix} u_1(x_1, x_2, 0) \\ u_2(x_1, x_2, 0) \\ u_3(x_1, x_2, 0) \end{Bmatrix} = \begin{Bmatrix} R_H \cos\theta \\ R_H \sin\theta \\ R_V \end{Bmatrix} \exp\{i\omega[t - (x_1 \cos\theta + x_2 \sin\theta)/C_R]\} \quad , \quad (7)$$

where R_H and R_V are the amplitudes of the horizontal and vertical components, and C_R is the Rayleigh wave velocity. For a Poisson's ratio of 0.33, $R_V = -1.565\, i R_H$ and $C_R = 0.9325\beta$; while for a Poisson's ratio of 0.45, $R_V = -1.743\, i R_H$ and $C_R = 0.949\beta$.

For both types of seismic excitations, the presence of the rigid foundation modifies the free-field motion by the addition of diffracted waves. The resulting motion of the rigid massless foundation in absence of external forces is designated foundation input motion and includes, in general, translations and rotations. The response of the foundation for a particular type of seismic excitation, i.e., the foundation input motion for that particular excitation, can be represented by the input motion vector

$$\{U^*\} = (U_1^*, U_2^*, U_3^*, L\varphi_1^*, L\varphi_2^*, L\varphi_3^*) \tag{8}$$

where $(U_1^*, U_2^*, U_3^*)e^{i\omega t}$ corresponds to the motion of the center of the foundation and $(\varphi_1^*, \varphi_2^*, \varphi_3^*)e^{i\omega t}$ corresponds to the rotation vector. The characteristics of the foundation input motion for horizontally incident SH waves and Rayleigh waves are discussed in subsequent sections.

The evaluation of the impedance matrix and of the foundation input motion for different types of seismic waves entail the solution of a set of mixed boundary-value problems in elasticity. The method of solution employed to obtain the results presented in this report has been described briefly in the previous section. Detailed descriptions may be found in Refs. [1, 7, 8]. Once the stiffness matrix and the foundation input motion have been obtained, the force displacement relationship for a massless rigid foundation subjected to both external forces and seismic excitation can be written in the form

$$\{F\} = [K](\{U\} - \{U^*\}) \tag{9}$$

where $\{F\}$ represents the generalized external forces, $\{U\}$ the total motion and $\{U^*\}$ the foundation input motion [31, 34]. The force-displacement relationship for the foundation given by Eq. (9) constitutes one of the basic elements necessary for a complete soil-structure analysis [33, 34].

IMPEDANCE FUNCTIONS

The impedance functions for rectangular foundations with aspect ratios B/C = 1, 2, 3 and 4 have been computed for 21 values of the dimensionless frequency $A_o = \omega L/\beta$ in the range from 0. to 10. The computations have been performed for two values of the Poisson's ratio $\nu = 1/3$ and 0.45, and for three values of the hysteretic damping ratio $\xi = 0.$, 0.02 and 0.05. The real and imaginary parts of the results are presented in Tables A.1.1.1 through A2.4.3. The tables are organized on the basis of three integers I, J and K (Table A.I.J.K). Values of I = 1 and 2 corresponds to values of $\nu = 1/3$ and 0.45, respectively. Values of J = 1, 2, 3 and 4 correspond to values of B/C = 1, 2, 3 and 4, respectively. Finally, values of K = 1, 2 and 3 correspond to values of $\xi = 0.$, 0.02 and 0.05, respectively.

Some typical results corresponding to the impedance functions for a rectangular foundation with an aspect ratio B/C = 4 supported on an elastic half-space ($\xi = 0.$) are shown in Figs. 2, 3 and 4. In these figures the real and imaginary parts of the impedance functions are plotted versus the dimensionless frequency A_o for two values of the Poisson's ratio (the imaginary parts have been divided by A_o in the figures). The impedance functions shown in Fig. 2 (K_{11}, $K_{15} = K_{51}$, K_{55}) are those involved in coupled horizontal-rocking vibrations in the x_1x_3-vertical plane. Similarly, the impedance functions shown in Fig. 3 are those involved in coupled horizontal-rocking vibrations in the x_2x_3-vertical plane. The results shown in Fig. 4 correspond to the vertical (K_{33}) and torsional impedance functions (K_{66}).

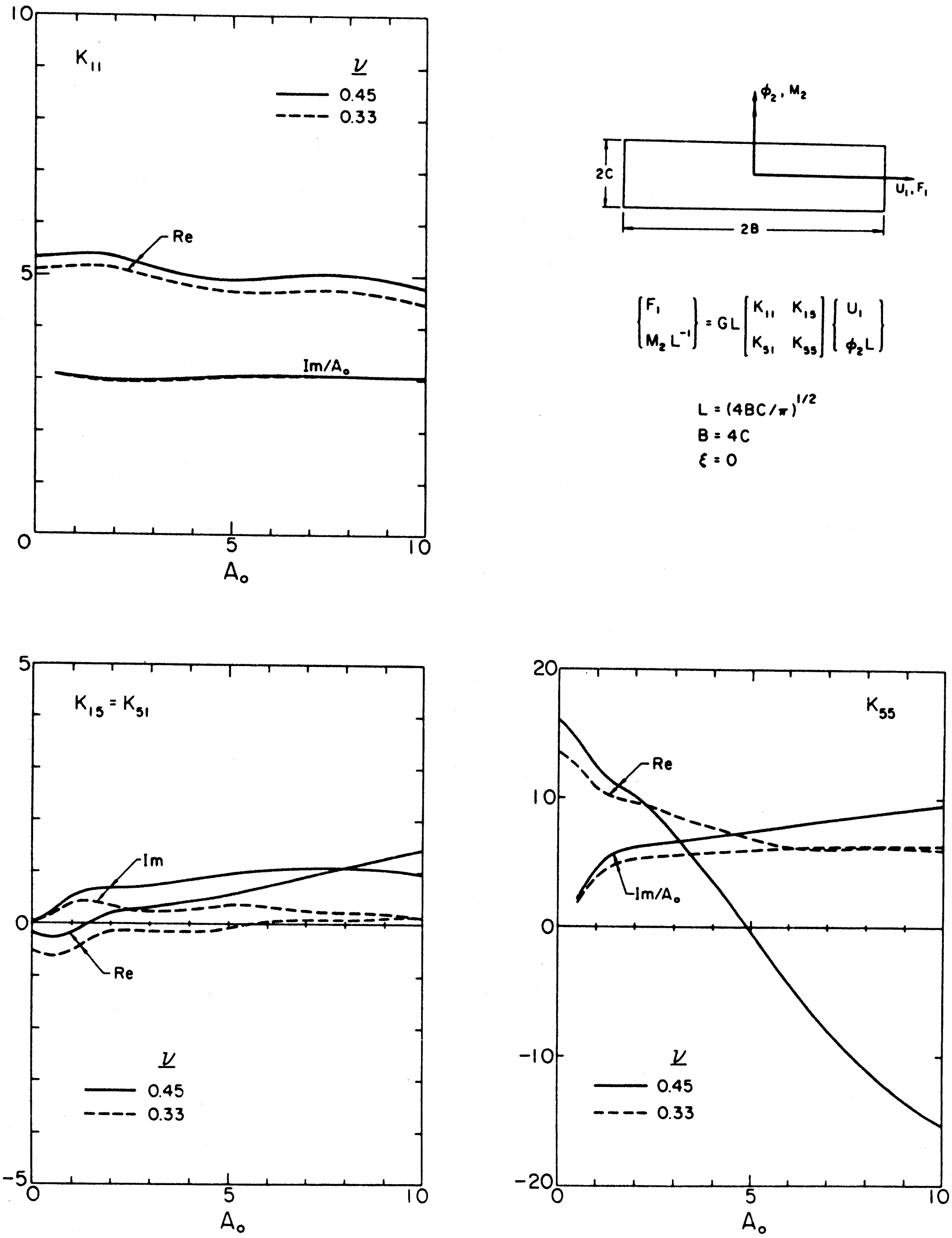

Figure 2 Impedance Functions K_{11}, $K_{15} = K_{51}$ and K_{55} for a Rectangular Foundation (B/C = 4, $\xi = 0$).

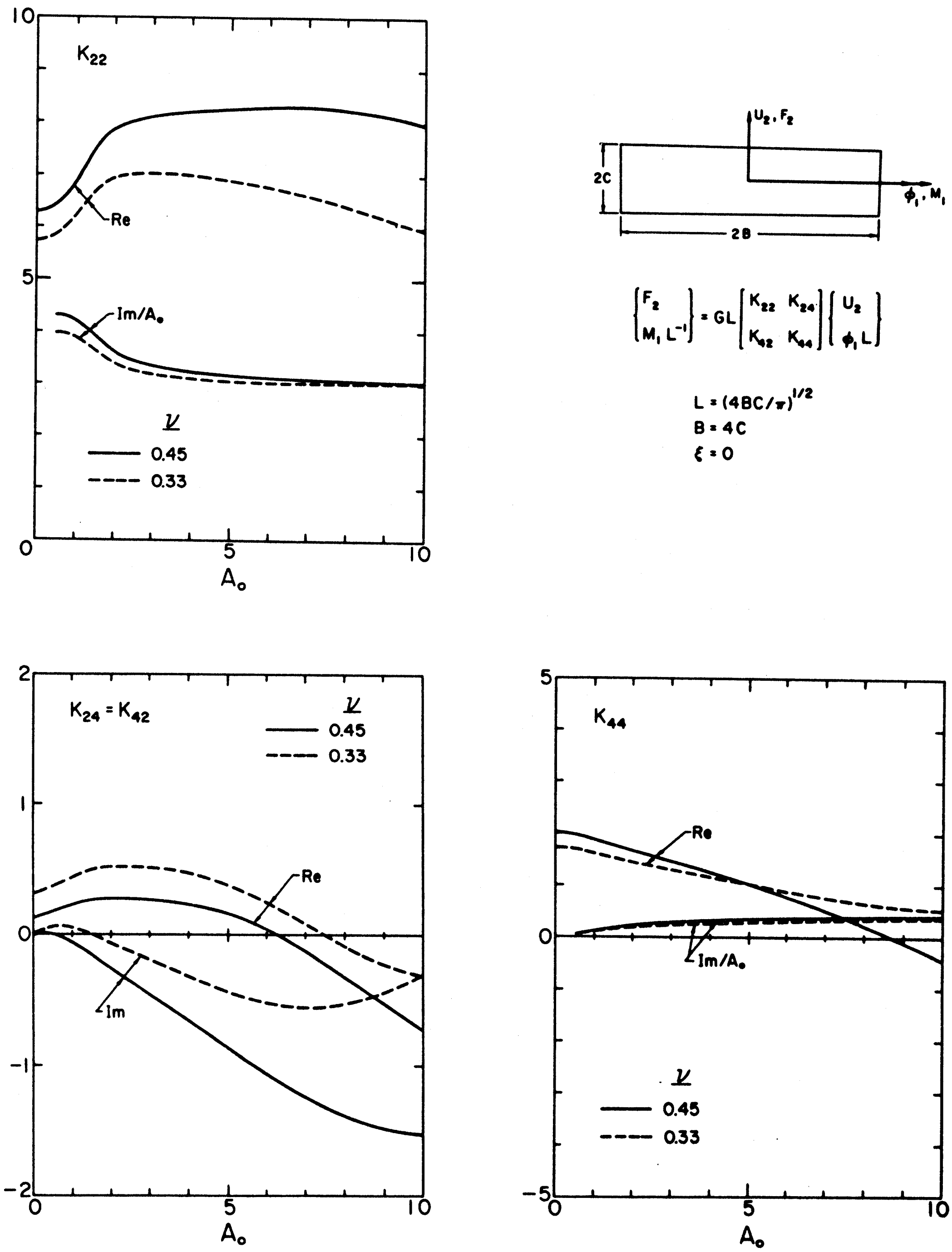

Figure 3 Impedance Functions K_{22}, $K_{24} = K_{42}$ and K_{44} for a Rectangular Foundation ($B/C = 4$, $\xi = 0$).

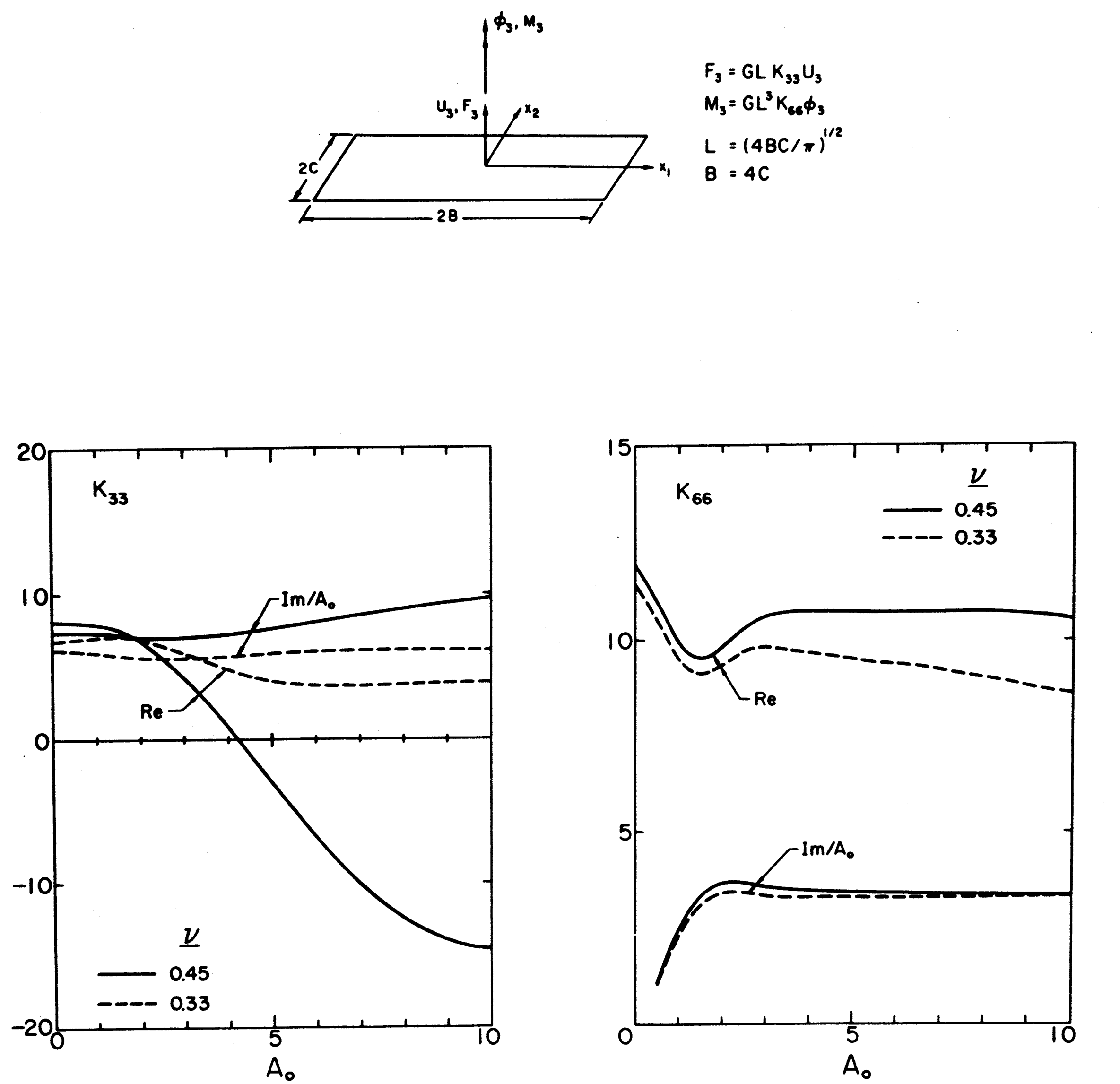

Figure 4 Impedance Functions K_{33} and K_{66} for a Rectangular Foundation ($B/C = 4$, $\xi = 0$).

The characteristics of the impedance functions for rectangular foundations are very similar to those for circular foundations. To describe these characteristics it is convenient to define the quantities $k_{\ell m} = \text{Re}K_{\ell m}$ (ℓ, m = 1, 5) as stiffness coefficients and $c_{\ell m} = \text{Im}(K_{\ell m}/A_o)$ (ℓ, m = 1, 5) as damping coefficients. Some of the properties of the impedance functions are : (1) the coupling terms $K_{15} = K_{51}$ and $K_{24} = K_{42}$ are much smaller than the remaining terms, (2) the stiffness coefficients are more sensitive to the values of Poisson's ratio than the damping coefficients, (3) the rocking and vertical stiffness coefficients k_{44}, k_{55} and k_{33} become negative as the frequency increases for soils with Poisson's ratios close to 0.5, (4) the damping terms c_{11}, c_{22}, c_{33}, c_{44}, c_{55} and c_{66} tend to constant values as the frequency increases, (5) the damping coefficients associated with rotations (c_{44}, c_{55} and c_{66}) are very small at low frequencies, and (6) the damping coefficients associated with translations (c_{11}, c_{22}, c_{33}) are not very dependent on frequency.

The effects of material damping on the impedance functions are illustrated in Fig. 5. In this figure the real and imaginary parts of the torsional impedance K_{66} for a square foundation (B/C = 1) supported on a soil with a Poisson's ratio of 1/3 are plotted versus the dimensionless frequency A_o for three values of the hysteretic damping constant ξ. As shown in Fig. 5 the effect of material damping on the impedance functions corresponds to a reduction of the stiffness coefficients at high frequencies and to an increase of the damping coefficients at low frequencies.

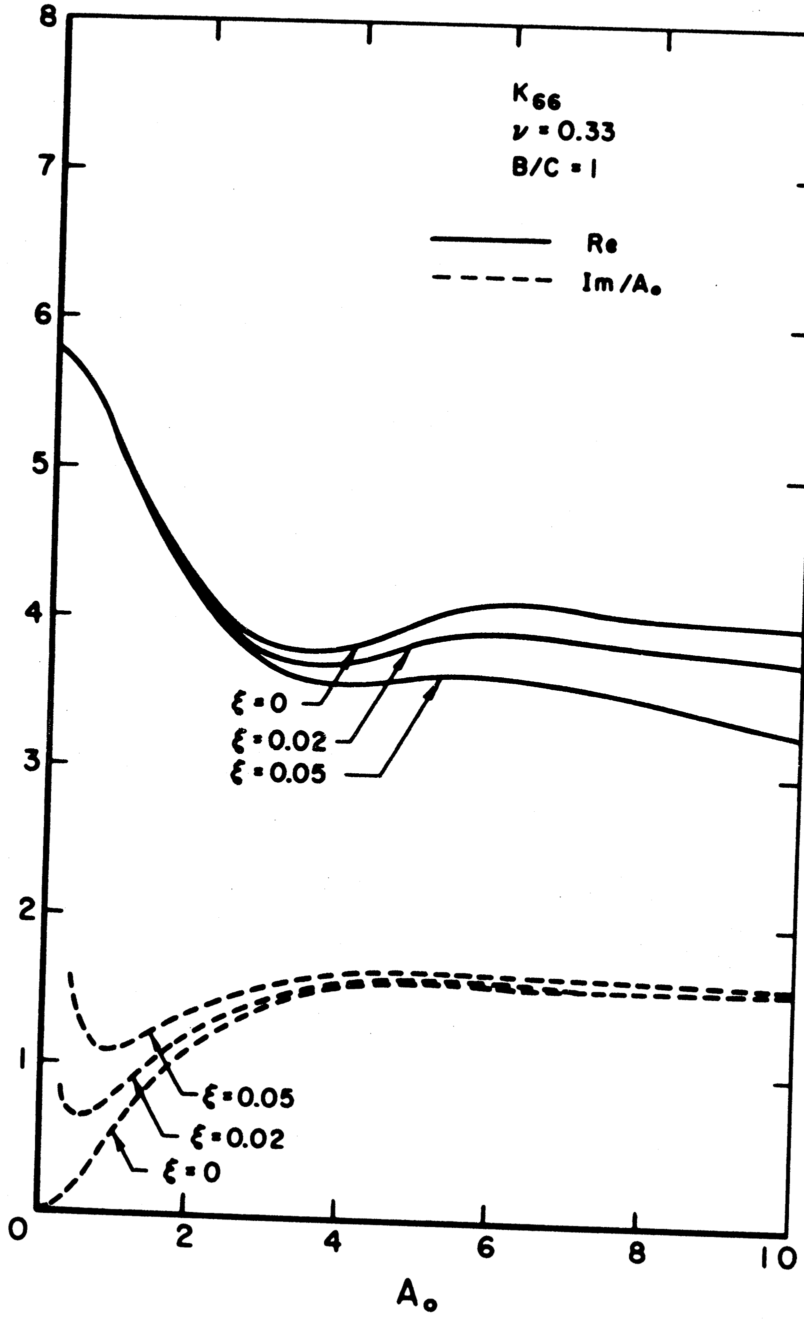

Figure 5 Effect of Material Damping on the Torsional Impedance Function K_{66} (B/C = 1, ν = 0.33).

The effects of the length to width ratio B/C on the impedance functions are illustrated in Fig. 6. In this figure the real and imaginary parts of the horizontal impedance function K_{11} for rectangular foundations with different aspect ratios B/C are plotted versus the dimensionless frequency A_o for a perfectly elastic soil ($\xi \doteq 0$) with a Poisson's ratio of 1/3. The normalization introduced by Eqs. (4) and (5) is such that the comparison between normalized impedance functions for the different foundations is on an equal area basis. Figure 6 shows that if $1 \leq B/C < 4$ the effect of the aspect ratio on K_{11} is not very pronounced, while if $B/C < 1$ the effect becomes significant.

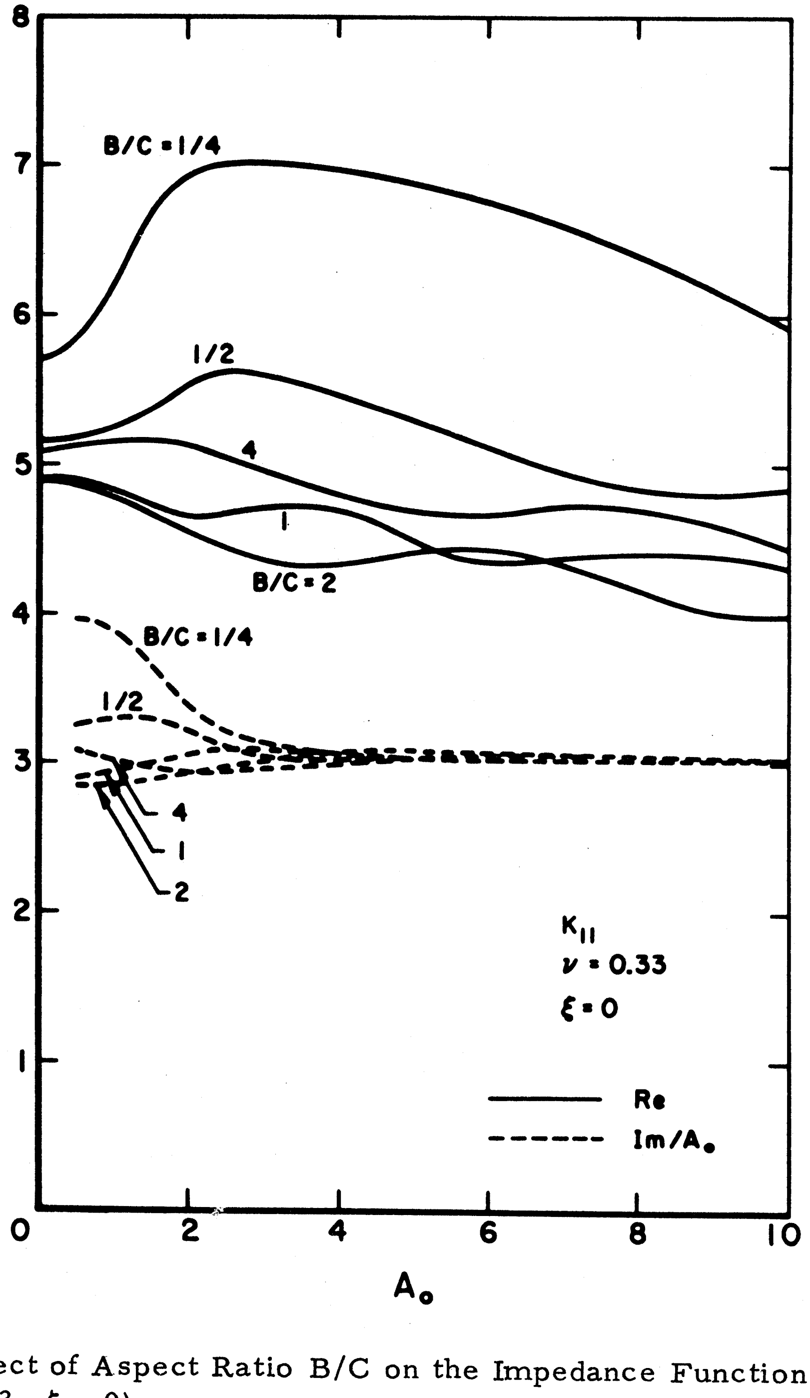

Figure 6 Effect of Aspect Ratio B/C on the Impedance Function K_{11} (ν = 0.33, ξ = 0).

FOUNDATION INPUT MOTION FOR SH-WAVES

The response of massless rigid rectangular foundations with aspect ratios B/C = 1, 2, 3 and 4 excited by horizontally incident SH-waves have been computed for different values of the dimensionless frequency $A_o = \omega L/\beta$ in the range from 0 to 10 and for two values of the Poisson's ratio $\nu = 0.33$ and 0.45. The computed response for two directions of incidence, $\theta = 0^\circ$ and $\theta = 90^\circ$ (refer to Fig. 1), and for a perfectly elastic medium ($\xi = 0$) are presented in Tables B.1.1 through B.2.4. The response for SH-waves impinging on the foundation along the $\theta = 0^\circ$ direction for soils with hysteretic damping constants $\xi = 0.$, 0.02 and 0.05 are presented in Tables C.1.1 through C.2.4. Both sets of tables are organized on the basis of two integers I and J (e.g., Table B.I.J). Values of I = 1 and 2 correspond to values of $\nu = 0.33$ ($\nu = 1/3$ in Tables C.I.J) and 0.45, respectively, while values of J = 1, 2, 3 and 4 correspond to aspect ratios B/C = 1, 2, 3 and 4, respectively. The results presented in the tables have been normalized by the amplitude S of the free-field motion on the soil surface in absence of the foundation (S = A for $\theta = 0^\circ$ and S = -A for $\theta = 90^\circ$, where A is the amplitude introduced in Eq. (6)).

Some typical results corresponding to the foundation input motion for a rectangular foundation with an aspect ratio of B/C = 4 supported on a perfectly elastic half-space ($\xi = 0$) and excited by horizontally incident SH-waves impinging on the foundation along the directions $\theta = 0^\circ$ and $\theta = 90^\circ$ are shown in Figs. 7 and 8, respectively. In these figures the

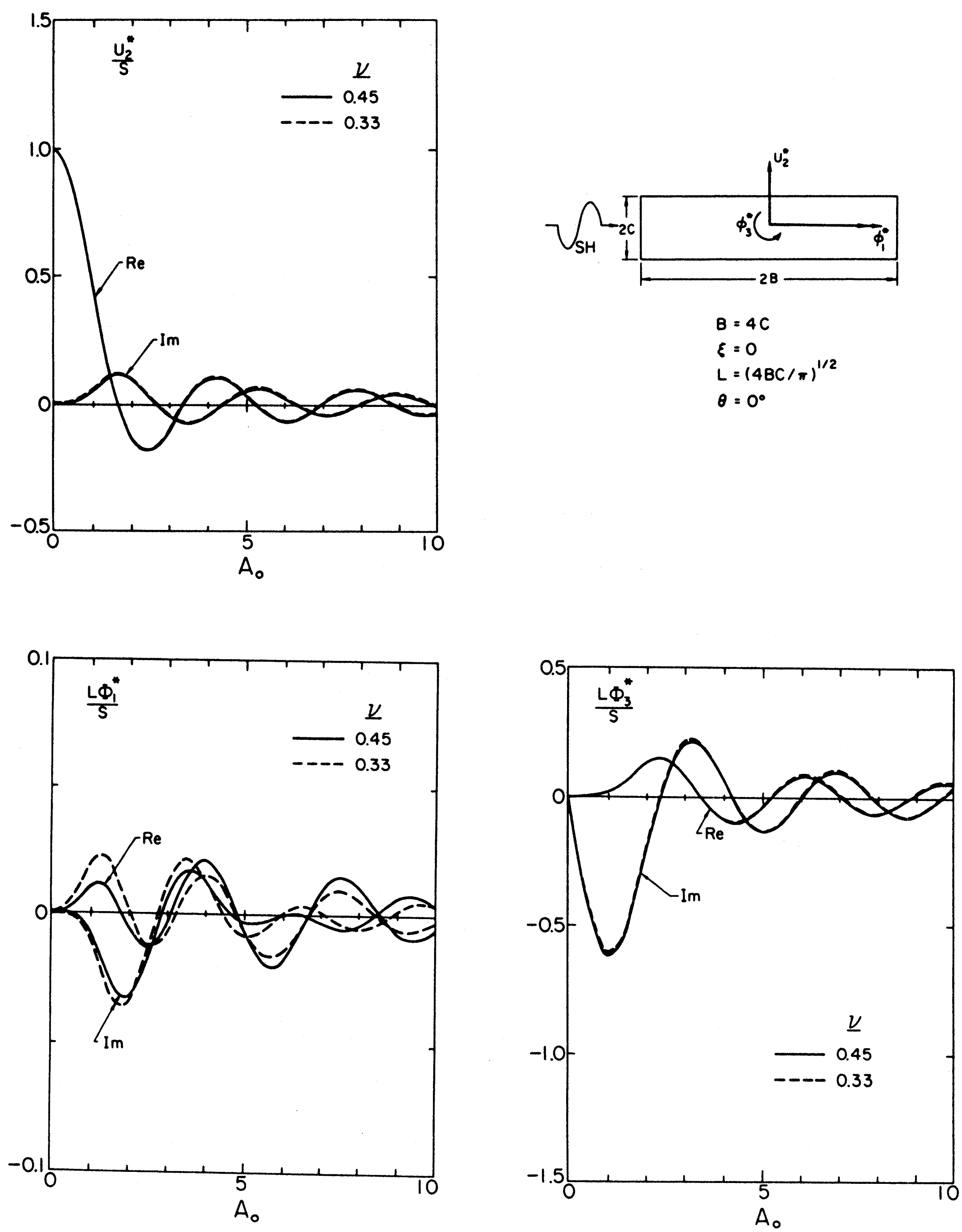

Figure 7 Foundation Input Motion for Horizontally Incident SH-Waves ($\theta = 0^o$, $B/C = 4$, $\xi = 0$).

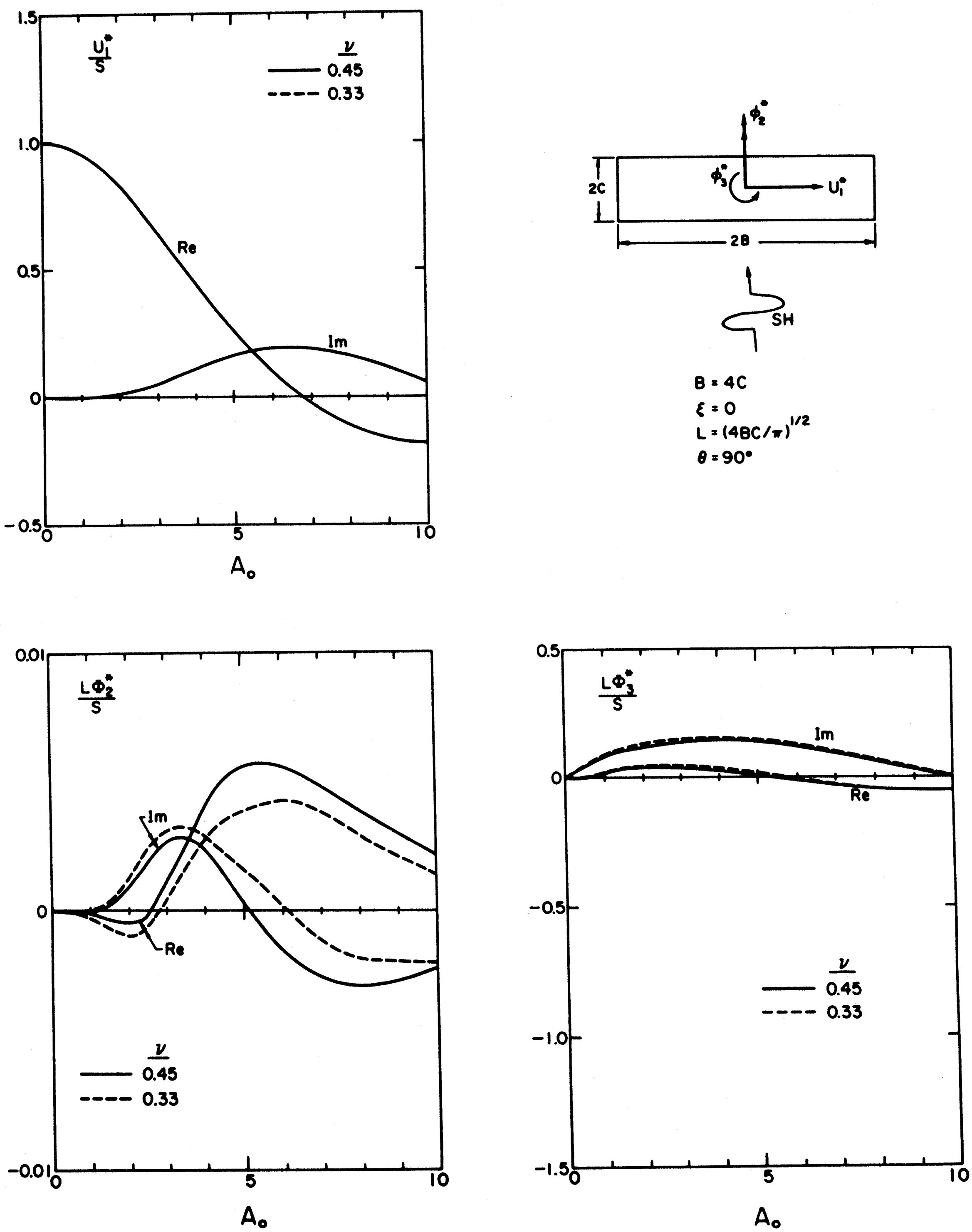

Figure 8 Foundation Input Motion for Horizontally Incident SH-Waves (θ = 90°, B/C = 4, ξ = 0).

real and imaginary parts of the nonzero components of the response normalized by the amplitude of the free-field motion are plotted versus the dimensionless frequency A_o for two values of Poisson's ratio.

The results shown in Fig. 7, indicate that the foundation response for a horizontally incident SH-wave of amplitude S propagating along the direction $\theta = 0^o$ consists of three components: (i) U_2^*, translation along the x_2-axis, (ii) φ_1^*, rotation about the x_1-axis, and (iii) φ_3^*, torsion about the vertical x_3-axis. As shown in Fig. 7, the translational response U_2^*, which has the same amplitude as the free-field motion at low frequency, experiences a drastic reduction in amplitude as the frequency increases. The results obtained also indicate that the rocking component of the response φ_1^* is very small as compared with the other components. The torsional component of the response φ_3^* is quite significant particularly for values of A_o in the neighborhood of 1.

For horizontally incident SH-waves propagating in the direction $\theta = 90^o$ the foundation response has again three nonzero components, U_1^*, φ_2^* and φ_3^*, as shown in Fig. 8. In this case, the amplitude of the torsional response φ_3^* is considerably lower than that for $\theta = 90^o$. For both angles of incidence, the effects of Poisson's ratio on the response are not significant.

The effects of the aspect ratio B/C on the response of the foundation are illustrated in Figs. 9 and 10. The real part of the translational response U_2^* normalized by the amplitude S of the free-field

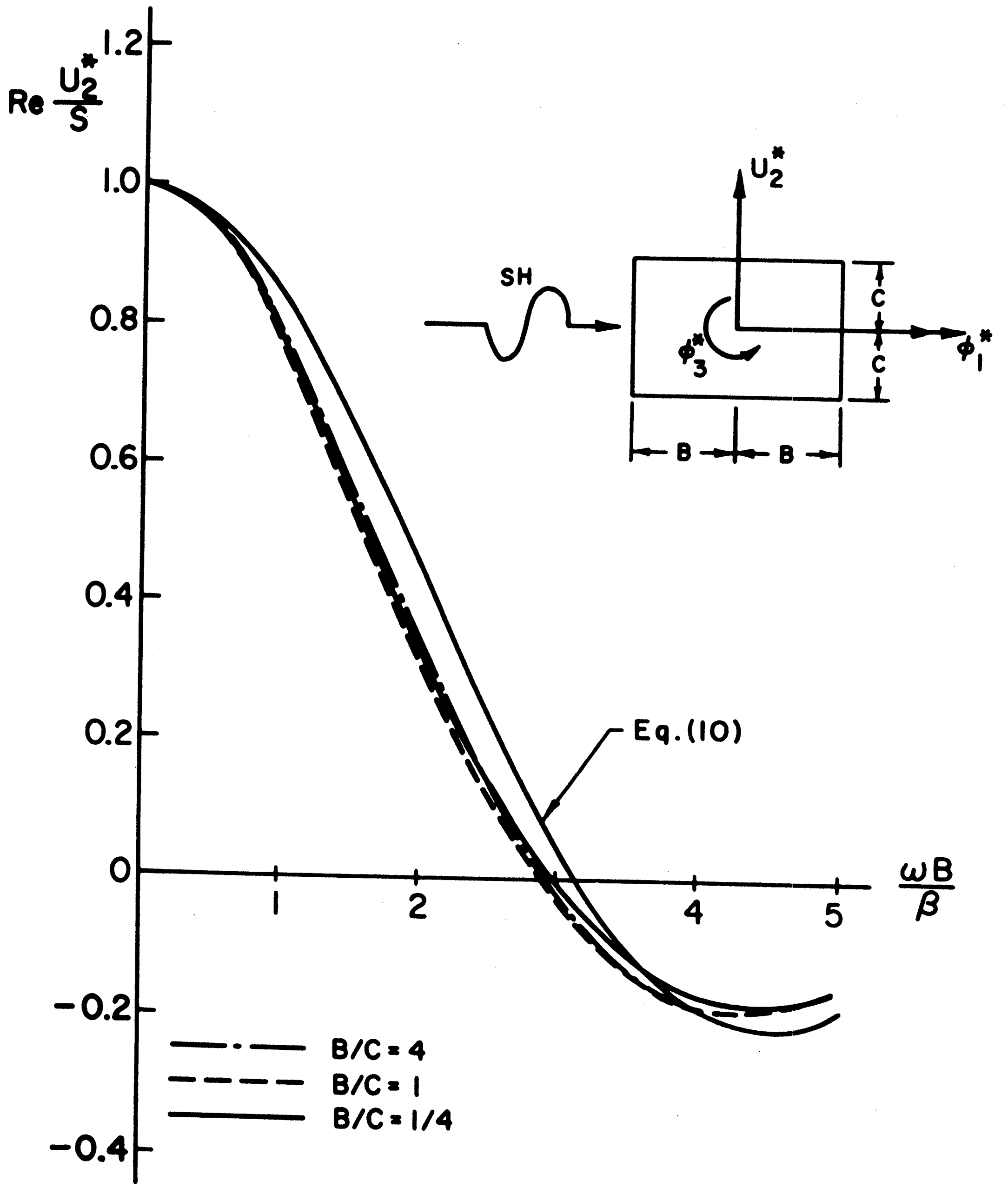

Figure 9 Effect of Aspect Ratio B/C on the Foundation Input Motion for SH-Waves (ξ = 0, ν = 0.33, θ = 0°).

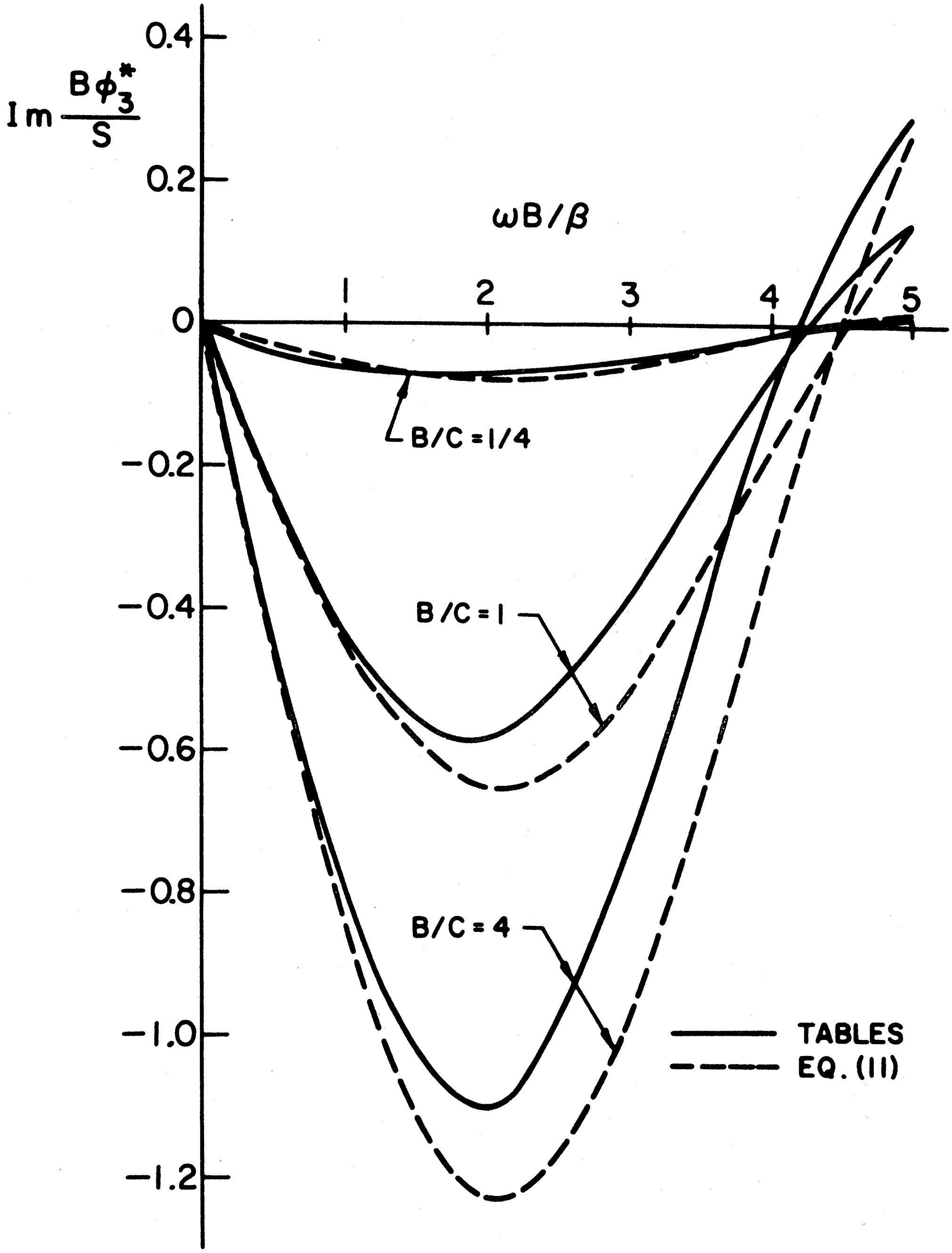

Figure 10 Effect of Aspect Ratio B/C on the Foundation Input Motion for SH-Waves ($\xi = 0$, $\nu = 0.33$, $\theta = 0^{\circ}$).

motion for foundations with aspect ratios $B/C = 0.25$, 1 and 4 are shown in Fig. 9 versus the dimensionless frequency $\omega B/\beta$ for SH-wave excitation propagating in the direction $\theta = 0^\circ$. The results shown indicate that the translational response is essentially independent of the aspect ratio and depends only on the length of the foundation in the direction of propagation. This is not the case for the torsional component of the response which depends markedly on the aspect ratio as shown in Fig. 10. The more elongated the foundation in the direction of propagation, the higher the torsional response. When $B/C > 1$, the tangential motion $B\varphi_3^*$ at the ends $x_1 = \pm B$ of the foundation may have an amplitude similar to that of the free-field motion.

Tani et al [28], Iguchi [29] and Scanlan [30] have proposed the use of appropriate averages of the free-field motion as approximations to the foundation input motion. For the case of a rectangular foundation excited in the direction $\theta = 0^\circ$ these approximations are

$$U_2^*/S = \sin B_o / B_o \qquad (10)$$

$$B\varphi_3^*/S = -i \frac{3}{1 + (C/B)^2} \left[\frac{\sin B_o}{B_o^2} - \frac{\cos B_o}{B_o} \right] \qquad (11)$$

where $B_o = \omega B/\beta$. These approximations are compared in Figs. 9 and 10 with the more accurate values obtained in this report. Based on the comparison, it seems that the approximate expressions may be sufficient for preliminary analysis.

Tables C.1.1 through C.2.4 indicate that the effects of material damping on the foundation input motion for SH-waves are very small at low frequencies and that these effects increase with frequency.

The tables presented in this report correspond to the case of horizontally incident SH-waves. The response of square foundations to nonvertically incident SH-waves and to other types of internal waves with different angles of incidence may be found in Ref. [31].

FOUNDATION INPUT MOTION FOR RAYLEIGH WAVES

The response of rigid massless rectangular foundation with different aspects ratios excited by harmonic Rayleigh waves have been computed and the results have been summarized in Tables D.1.1 through D.2.4. The results presented in the tables include the response for Rayleigh waves impinging on the foundation along the lines $\theta = 0^\circ$ and $\theta = 90^\circ$ as shown in Fig. 1. The results are normalized by R_H the amplitude of the horizontal component of the free-field motion associated with the Rayleigh wave.

Some typical results for a foundation with an aspect ratio of B/C = 4 are illustrated in Figs. 11 and 12. The three nonzero components of the response U_1^*, U_3^* and φ_2^* for a Rayliegh wave impinging on the foundation along the direction $\theta = 0^\circ$ are shown in Fig. 11 as a function of the dimensionless frequency $A_o = \omega L/\beta$. Inspection of Fig. 11 indicates that the translational components of the response present a marked reduction in amplitude as the frequency increases. A second important characteristic of the response is that a significant rocking component is generated. The nonzero components of the response U_2^*, U_3^* and φ_1^* for a Rayleigh wave impinging on the foundation along the line $\theta = 90^\circ$ are shown in Fig. 12. Again, the reduction in amplitude of translational components may be observed as the frequency increases. The results presented in Figs. 11 and 12 indicate that the response is not strongly dependent on the value of the Poisson's ratio.

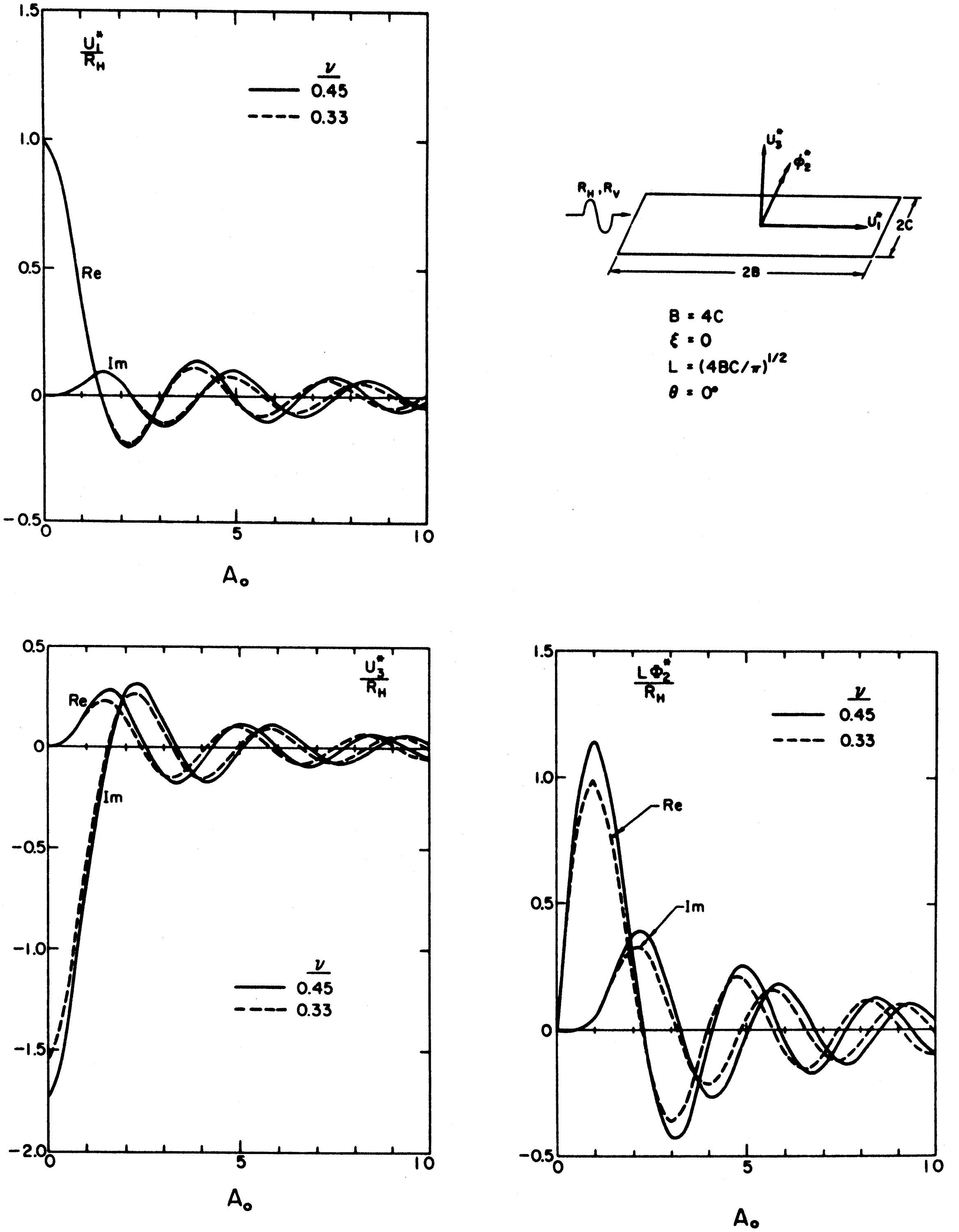

Figure 11 Foundation Input Motion for Rayleigh Waves ($\theta = 0^{\circ}$, $B/C = 4$, $\xi = 0$).

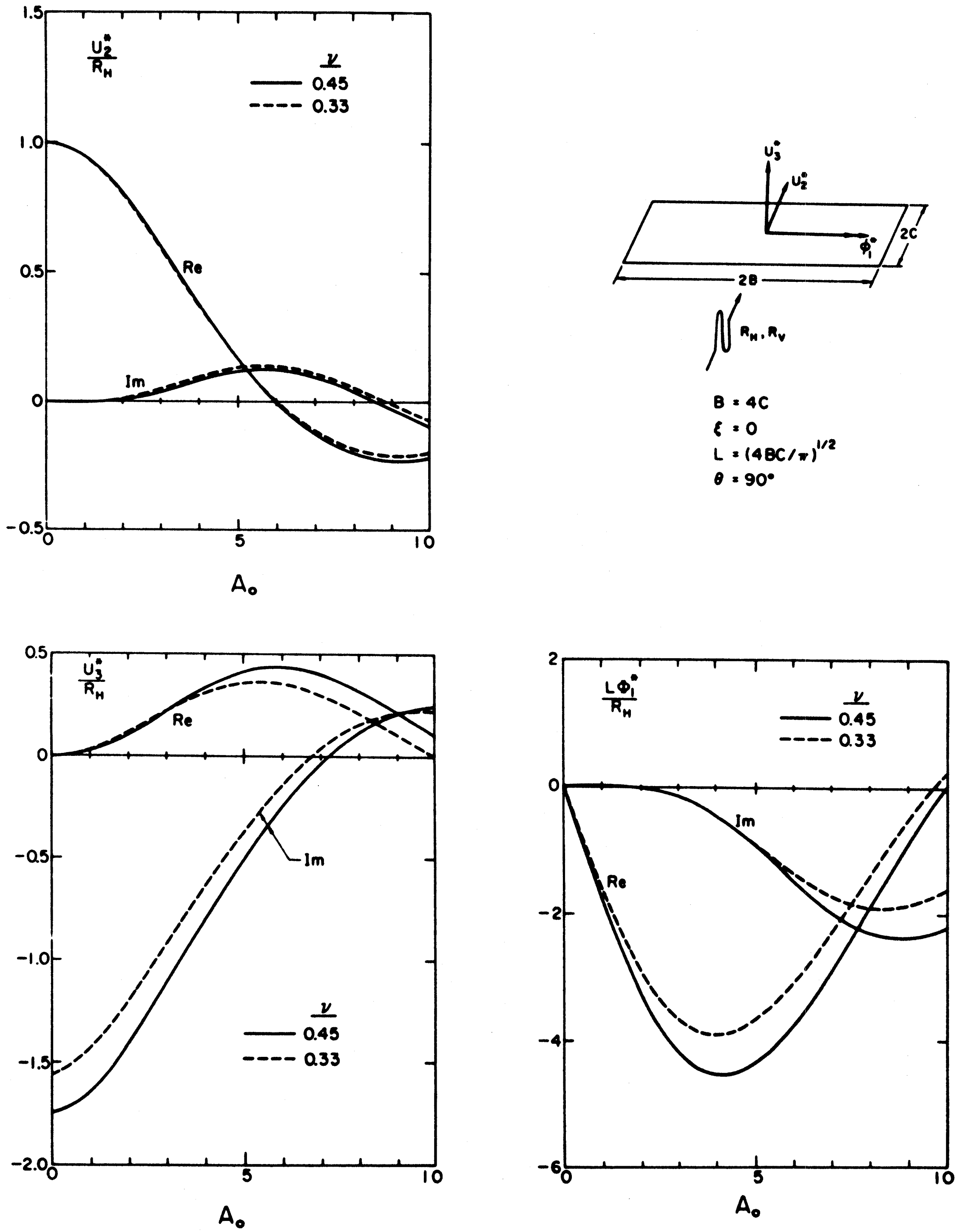

Figure 12 Foundation Input Motion for Rayleigh Waves ($\theta = 90^{\circ}$, $B/C = 4$, $\xi = 0$).

The effects of the aspect ratio B/C on the response to Rayleigh waves are illustrated in Fig. 13. In this figure the normalized response components U_1^*/R_H, U_3^*/R_H and $B\varphi_2^*/R_H$ are plotted versus the dimensionless frequency $\omega B/\beta$ for the case of incidence along $\theta = 0^\circ$. The results presented indicate that the aspect ratio of foundation has no marked effect on the response, the important parameter corresponds to the length of the foundation in the direction of propagation of the incident wave. It must be emphasized that the rocking component of the response may induce vertical displacements $B\varphi_2^*$ at the ends $x_2 = \pm B$ of the foundation of amplitude twice as high as the amplitude of the horizontal component of the free-field motion.

The results presented in this report correspond to Rayleigh wave excitation impinging on the foundation in the directions $\theta = 0^\circ$ and $\theta = 90^\circ$. For other angles of incidence the response of the foundation involves all of the translational and rotational components of motion. Values for the response in the more general case may be found in Ref. [32].

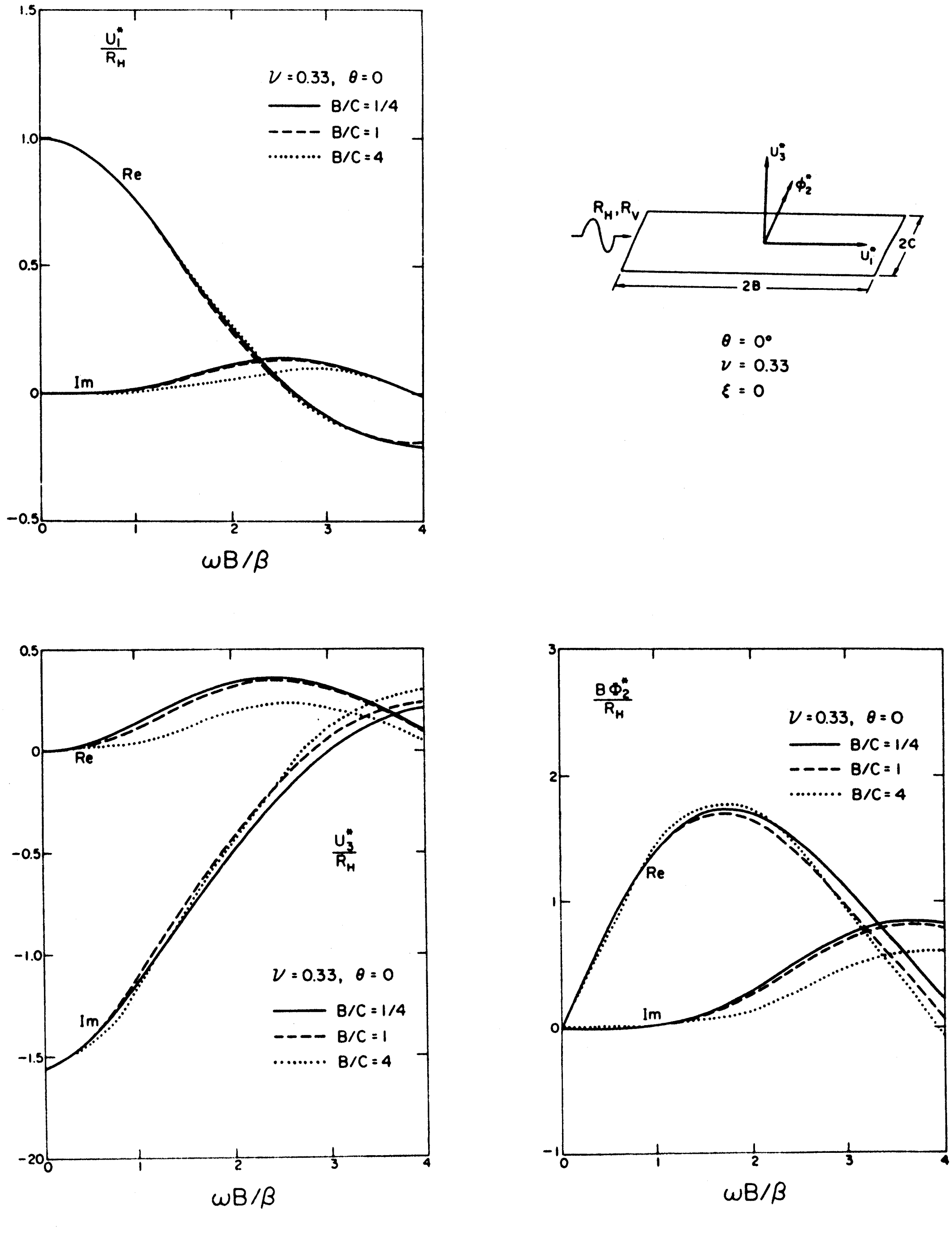

Figure 13 Effect of Aspect Ratio B/C on the Foundation Input Motion for Rayleigh Waves ($\xi = 0$, $\nu = 0.33$, $\theta = 0^{\circ}$).

SUMMARY AND CONCLUSIONS

Numerical values for the functions which characterize the steady-state response of rigid rectangular foundation excited by external forces and moments, and by horizontally incident SH- and Rayleigh waves have been presented. The results presented correspond to the case of a massless rigid rectangular foundation prefectly bonded to the surface of a uniform viscoelastic half-space. The dependence of the results on the geometry of the foundation and on the Poisson's ratio and hysteretic damping constant for the half-space have been described.

The results presented include the complete impedance matrix for the foundation as well as the foundation input motions for horizontally incident SH- and Rayleigh waves. It is expected that these results will prove useful in the study of vibrations of machine foundations as well as in the study of the response of structures excited by nonvertically incident waves. In particular, the results obtained indicate that the dynamic response of a massless foundation excited by horizontally incident waves differs both in magnitude and nature from the corresponding response for vertically incident waves. Horizontally propagating SH-waves generate a marked torsional response, while Rayleigh waves may cause a considerable amount of rocking of the foundation. Horizontally incident waves also cause a notable reduction of the translational response for high frequencies. These results have important implications in the seismic analysis and design structures.

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A. TABLES OF IMPEDANCE FUNCTIONS

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(1) The tables of impedance functions are organized on the basis of three integers (TABLE A. I. J. K):
I = 1, 2 correspond to ν = 1/3, 0.45;
J = 1, 2, 3, 4 correspond to B/C = 1, 2, 3, 4;
K = 1, 2, 3 correspond to ξ = 0.00, 0.02, 0.05.

(2) The notation -398 + 0 - 159 - 1 denotes the complex number -0.398 - i0.0159.

TABLE A1.1.1 Poisson's Ratio = 1/3, B/C = 1, Damping = 0%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	490+1	000+0	-399+0	000+0	435+1	000+0	490+1	000+0	399+0	000+0	435+1	000+0	619+1	000+0	579+1	000+0
0.5	489+1	145+1	-481+0	-124-1	413+1	105+0	489+1	145+1	481+0	124-1	413+1	105+0	611+1	252+1	554+1	974-1
1.0	480+1	294+1	-536+0	708-1	366+1	566+0	480+1	294+1	536+0	-708-1	366+1	566+0	569+1	512+1	501+1	563+0
1.5	470+1	449+1	-555+0	179+0	326+1	125+1	470+1	449+1	555+0	-179+0	326+1	125+1	507+1	796+1	454+1	131+1
2.0	465+1	610+1	-536+0	308+0	294+1	203+1	465+1	610+1	536+0	-308+0	294+1	203+1	440+1	111+2	419+1	220+1
2.5	467+1	769+1	-460+0	439+0	266+1	286+1	467+1	769+1	460+0	-439+0	266+1	286+1	389+1	145+2	395+1	316+1
3.0	471+1	924+1	-327+0	539+0	242+1	373+1	471+1	923+1	327+0	-539+0	242+1	373+1	363+1	181+2	382+1	418+1
3.5	472+1	107+2	-162+0	580+0	222+1	463+1	472+1	107+2	162+0	-580+0	222+1	463+1	360+1	216+2	378+1	522+1
4.0	468+1	122+2	420-2	555+0	205+1	556+1	468+1	122+2	-421-2	-555+0	205+1	556+1	371+1	249+2	383+1	621+1
4.5	458+1	137+2	138+0	473+0	192+1	652+1	459+1	137+2	-138+0	-473+0	192+1	652+1	388+1	281+2	392+1	712+1
5.0	447+1	152+2	222+0	357+0	185+1	749+1	447+1	152+2	-222+0	-357+0	185+1	749+1	407+1	312+2	402+1	793+1
5.5	438+1	168+2	244+0	234+0	183+1	845+1	438+1	168+2	-244+0	-234+0	183+1	845+1	420+1	342+2	410+1	869+1
6.0	435+1	185+2	216+0	130+0	186+1	938+1	435+1	185+2	-216+0	-130+0	186+1	938+1	425+1	370+2	414+1	943+1
6.5	436+1	201+2	157+0	602-1	193+1	103+2	436+1	201+2	-157+0	-601-1	193+1	103+2	418+1	398+2	414+1	102+2
7.0	439+1	216+2	866-1	287-1	202+1	111+2	439+1	216+2	-865-1	-285-1	202+1	111+2	400+1	427+2	411+1	110+2
7.5	442+1	232+2	188-1	295-1	211+1	119+2	442+1	232+2	-188-1	-295-1	211+1	119+2	372+1	456+2	407+1	118+2
8.0	442+1	247+2	-351-1	561-1	216+1	126+2	442+1	247+2	353-1	-562-1	216+1	126+2	336+1	486+2	405+1	126+2
8.5	441+1	262+2	-718-1	986-1	218+1	133+2	440+1	262+2	720-1	-986-1	218+1	133+2	299+1	517+2	404+1	134+2
9.0	438+1	277+2	-841-1	148+0	214+1	140+2	438+1	277+2	845-1	-148+0	214+1	140+2	270+1	549+2	404+1	141+2
9.5	434+1	292+2	-732-1	198+0	207+1	147+2	434+1	292+2	737-1	-198+0	207+1	147+2	253+1	583+2	403+1	149+2
10.0	430+1	307+2	-385-1	230+0	196+1	155+2	430+1	307+2	391-1	-231+0	196+1	155+2	248+1	616+2	398+1	157+2

TABLE A1.1.2 Poisson's Ratio = 1/3, B/C = 1, Damping = 2%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	489+1	196+0	-398+0	-159-1	434+1	174+0	489+1	196+0	398+0	159-1	434+1	174+0	618+1	247+0	578+1	231+0
0.5	484+1	164+1	-475+0	-291-1	410+1	275+0	484+1	164+1	475+0	291-1	410+1	275+0	602+1	273+1	552+1	327+0
1.0	473+1	312+1	-529+0	524-1	364+1	722+0	473+1	312+1	529+0	-524-1	364+1	722+0	558+1	531+1	501+1	781+0
1.5	462+1	466+1	-548+0	160+0	324+1	139+1	462+1	466+1	548+0	-160+0	324+1	139+1	495+1	813+1	454+1	152+1
2.0	455+1	625+1	-529+0	287+0	291+1	215+1	455+1	625+1	529+0	-287+0	291+1	215+1	430+1	113+2	418+1	240+1
2.5	454+1	784+1	-457+0	415+0	263+1	297+1	454+1	784+1	457+0	-415+0	263+1	297+1	380+1	146+2	392+1	336+1
3.0	455+1	938+1	-333+0	513+0	239+1	383+1	455+1	938+1	333+0	-513+0	239+1	383+1	354+1	181+2	375+1	435+1
3.5	455+1	109+2	-177+0	554+0	218+1	472+1	455+1	109+2	177+0	-554+0	218+1	472+1	351+1	216+2	369+1	536+1
4.0	449+1	123+2	-228-1	533+0	201+1	564+1	449+1	123+2	228-1	-533+0	201+1	564+1	362+1	250+2	372+1	632+1
4.5	439+1	138+2	104+0	458+0	188+1	658+1	439+1	138+2	-104+0	-458+0	188+1	658+1	379+1	282+2	379+1	722+1
5.0	428+1	154+2	186+0	349+0	181+1	753+1	428+1	154+2	-186+0	-349+0	181+1	753+1	395+1	312+2	388+1	805+1
5.5	418+1	170+2	213+0	231+0	179+1	848+1	418+1	170+2	-213+0	-230+0	179+1	848+1	406+1	342+2	393+1	882+1
6.0	413+1	186+2	193+0	128+0	182+1	940+1	413+1	186+2	-193+0	-128+0	182+1	940+1	416+1	371+2	394+1	958+1
6.5	412+1	202+2	142+0	556-1	189+1	103+2	412+1	202+2	-142+0	-556-1	189+1	103+2	411+1	400+2	393+1	103+2
7.0	413+1	218+2	792-1	192-1	197+1	111+2	413+1	218+2	-791-1	-191-1	197+1	111+2	396+1	428+2	390+1	111+2
7.5	414+1	233+2	205-1	133-1	205+1	119+2	414+1	233+2	-204-1	-133-1	205+1	119+2	372+1	458+2	387+1	119+2
8.0	414+1	248+2	-251-1	316-1	210+1	126+2	414+1	248+2	252-1	-316-1	210+1	126+2	341+1	488+2	386+1	127+2
8.5	412+1	263+2	-526-1	667-1	212+1	134+2	412+1	263+2	529-1	-667-1	212+1	134+2	311+1	520+2	385+1	135+2
9.0	409+1	278+2	-587-1	108+0	210+1	141+2	410+1	278+2	591-1	-109+0	210+1	141+2	287+1	552+2	383+1	143+2
9.5	405+1	293+2	-443-1	149+0	204+1	148+2	406+1	293+2	447-1	-149+0	204+1	148+2	275+1	585+2	380+1	150+2
10.0	401+1	309+2	-127-1	179+0	196+1	156+2	401+1	309+2	131-1	-180+0	196+1	156+2	271+1	618+2	377+1	158+2

TABLE A1.1.3 POISSON'S RATIO = 1/3, B/C = 1, DAMPING = 5%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	489+1	489+0	-399+0	-399-1	435+1	435+0	489+1	489+0	399+0	399-1	435+1	435+0	619+1	619+0	577+1	577+0
0.5	480+1	193+1	-472+0	-552-1	410+1	535+0	480+1	193+1	472+0	552-1	410+1	535+0	595+1	311+1	552+1	671+0
1.0	465+1	341+1	-527+0	229-1	364+1	967+0	465+1	341+1	527+0	-229-1	364+1	967+0	544+1	569+1	501+1	111+1
1.5	449+1	495+1	-549+0	127+0	323+1	162+1	449+1	495+1	549+0	-127+0	323+1	162+1	475+1	850+1	454+1	183+1
2.0	437+1	654+1	-533+0	250+0	289+1	237+1	437+1	654+1	533+0	-250+0	289+1	237+1	403+1	116+2	416+1	269+1
2.5	431+1	812+1	-467+0	373+0	258+1	317+1	431+1	812+1	467+0	-373+0	258+1	317+1	345+1	150+2	387+1	363+1
3.0	427+1	966+1	-353+0	468+0	232+1	401+1	427+1	966+1	353+0	-468+0	232+1	401+1	310+1	184+2	368+1	461+1
3.5	421+1	112+2	-210+0	512+0	209+1	489+1	421+1	112+2	210+0	-512+0	209+1	489+1	295+1	219+2	359+1	559+1
4.0	411+1	126+2	-671-1	499+0	190+1	580+1	411+1	126+2	671-1	-499+0	190+1	580+1	293+1	252+2	357+1	654+1
4.5	398+1	141+2	524-1	438+0	175+1	673+1	398+1	141+2	-524-1	-438+0	175+1	673+1	297+1	284+2	360+1	744+1
5.0	383+1	157+2	131+0	346+0	165+1	767+1	383+1	157+2	-131+0	-346+0	165+1	767+1	300+1	315+2	364+1	827+1
5.5	370+1	173+2	165+0	243+0	160+1	861+1	370+1	173+2	-165+0	-243+0	160+1	861+1	302+1	345+2	366+1	906+1
6.0	361+1	189+2	158+0	151+0	160+1	951+1	361+1	189+2	-158+0	-151+0	160+1	951+1	305+1	375+2	365+1	983+1
6.5	354+1	205+2	122+0	854-1	163+1	104+2	354+1	205+2	-122+0	-853-1	163+1	104+2	292+1	404+2	362+1	106+2
7.0	349+1	220+2	735-1	492-1	167+1	112+2	349+1	220+2	-734-1	-491-1	167+1	112+2	268+1	433+2	357+1	114+2
7.5	345+1	236+2	253-1	392-1	170+1	120+2	345+1	236+2	-252-1	-392-1	170+1	120+2	239+1	463+2	353+1	122+2
8.0	339+1	251+2	-133-1	512-1	172+1	128+2	339+1	251+2	135-1	-512-1	172+1	128+2	204+1	493+2	349+1	130+2
8.5	332+1	266+2	-391-1	765-1	171+1	135+2	332+1	266+2	394-1	-765-1	171+1	135+2	169+1	524+2	344+1	137+2
9.0	323+1	281+2	-468-1	109+0	167+1	143+2	323+1	281+2	471-1	-109+0	167+1	143+2	138+1	556+2	340+1	145+2
9.5	314+1	297+2	-377-1	140+0	159+1	150+2	314+1	297+2	381-1	-140+0	159+1	150+2	116+1	589+2	334+1	153+2
10.0	305+1	312+2	-138-1	164+0	150+1	158+2	306+1	312+2	142-1	-164+0	150+1	158+2	101+1	621+2	329+1	161+2

TABLE A1.2.1 Poisson's Ratio = 1/3, B/C = 2, Damping = 0%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	487+1	000+0	-460+0	000+0	746+1	000+0	517+1	000+0	349+0	000+0	265+1	000+0	633+1	000+0	697+1	000+0
0.5	486+1	142+1	-561+0	393-1	693+1	290+0	519+1	162+1	415+0	403-1	257+1	411-1	629+1	264+1	660+1	162+0
1.0	478+1	284+1	-564+0	189+0	600+1	144+1	523+1	329+1	485+0	368-2	236+1	230+0	600+1	534+1	594+1	872+0
1.5	466+1	432+1	-496+0	316+0	530+1	298+1	536+1	492+1	535+0	-735-1	217+1	524+0	560+1	816+1	543+1	194+1
2.0	454+1	585+1	-388+0	408+0	477+1	466+1	554+1	643+1	550+0	-177+0	201+1	857+0	514+1	111+2	513+1	316+1
2.5	444+1	743+1	-257+0	452+0	435+1	640+1	563+1	782+1	523+0	-283+0	187+1	121+1	464+1	142+2	504+1	441+1
3.0	436+1	905+1	-130+0	445+0	401+1	818+1	560+1	918+1	467+0	-373+0	172+1	158+1	419+1	174+2	508+1	558+1
3.5	432+1	107+2	-288-1	398+0	373+1	100+2	553+1	106+2	391+0	-447+0	159+1	196+1	386+1	208+2	514+1	662+1
4.0	433+1	123+2	310-1	336+0	352+1	119+2	545+1	121+2	301+0	-503+0	146+1	237+1	371+1	242+2	516+1	759+1
4.5	437+1	139+2	607-1	276+0	343+1	138+2	538+1	136+2	198+0	-538+0	134+1	279+1	370+1	275+2	512+1	857+1
5.0	442+1	154+2	656-1	224+0	347+1	157+2	531+1	151+2	880-1	-549+0	123+1	323+1	373+1	308+2	507+1	960+1
5.5	445+1	169+2	530-1	190+0	359+1	174+2	525+1	166+2	-226-1	-533+0	113+1	368+1	373+1	339+2	504+1	107+2
6.0	443+1	183+2	323-1	178+0	371+1	190+2	515+1	181+2	-124+0	-488+0	105+1	415+1	372+1	370+2	502+1	117+2
6.5	439+1	198+2	175-1	187+0	377+1	206+2	505+1	197+2	-205+0	-418+0	987+0	463+1	371+1	401+2	501+1	127+2
7.0	433+1	213+2	255-1	203+0	376+1	221+2	496+1	212+2	-259+0	-332+0	946+0	511+1	372+1	431+2	499+1	137+2
7.5	425+1	229+2	540-1	207+0	368+1	236+2	489+1	228+2	-281+0	-241+0	926+0	558+1	372+1	461+2	497+1	147+2
8.0	414+1	244+2	836-1	187+0	358+1	252+2	486+1	244+2	-273+0	-157+0	923+0	604+1	372+1	491+2	495+1	157+2
8.5	408+1	260+2	102+0	148+0	349+1	268+2	483+1	260+2	-241+0	-857-1	936+0	649+1	368+1	520+2	495+1	167+2
9.0	404+1	275+2	938-1	105+0	342+1	284+2	481+1	276+2	-196+0	-358-1	957+0	693+1	357+1	549+2	497+1	177+2
9.5	400+1	291+2	676-1	687-1	337+1	300+2	485+1	292+2	-144+0	-627-2	984+0	735+1	337+1	578+2	496+1	187+2
10.0	400+1	307+2	271-1	563-1	336+1	316+2	486+1	307+2	-913-1	242-2	102+1	775+1	315+1	607+2	495+1	197+2

TABLE A1.2.2 POISSON'S RATIO = 1/3, B/C = 2, DAMPING = 2%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	486+1	194+0	-459+0	-184-1	745+1	298+0	517+1	207+0	348+0	139-1	265+1	106+0	632+1	253+0	696+1	278+0
0.5	482+1	161+1	-554+0	187-1	688+1	579+0	514+1	182+1	409+0	544-1	255+1	146+0	620+1	285+1	659+1	437+0
1.0	472+1	303+1	-559+0	166+0	596+1	169+1	515+1	347+1	477+0	185-1	234+1	328+0	588+1	553+1	594+1	113+1
1.5	458+1	450+1	-495+0	293+0	525+1	320+1	526+1	508+1	525+0	-574-1	215+1	614+0	548+1	832+1	543+1	218+1
2.0	443+1	602+1	-392+0	386+0	472+1	484+1	541+1	658+1	539+0	-159+0	199+1	939+0	502+1	112+2	511+1	339+1
2.5	430+1	759+1	-268+0	432+0	429+1	656+1	548+1	797+1	515+0	-262+0	185+1	128+1	453+1	143+2	497+1	461+1
3.0	421+1	919+1	-147+0	429+0	394+1	832+1	546+1	936+1	463+0	-353+0	170+1	165+1	408+1	176+2	498+1	576+1
3.5	415+1	108+2	-508-1	387+0	365+1	101+2	537+1	108+2	391+0	-426+0	157+1	203+1	378+1	209+2	502+1	681+1
4.0	415+1	124+2	115-1	328+0	345+1	120+2	527+1	123+2	305+0	-482+0	144+1	243+1	364+1	243+2	501+1	779+1
4.5	416+1	140+2	421-1	266+0	335+1	139+2	519+1	138+2	209+0	-517+0	132+1	285+1	363+1	276+2	496+1	877+1
5.0	418+1	155+2	471-1	213+0	338+1	157+2	511+1	153+2	105+0	-528+0	121+1	328+1	365+1	308+2	489+1	978+1
5.5	419+1	170+2	376-1	175+0	349+1	174+2	502+1	168+2	319-3	-512+0	111+1	373+1	371+1	340+2	485+1	108+2
6.0	416+1	185+2	234-1	159+0	361+1	190+2	492+1	183+2	-951-1	-469+0	103+1	419+1	372+1	371+2	483+1	118+2
6.5	410+1	200+2	173-1	161+0	367+1	206+2	481+1	198+2	-172+0	-402+0	970+0	466+1	374+1	402+2	480+1	128+2
7.0	402+1	215+2	263-1	169+0	367+1	221+2	472+1	214+2	-224+0	-320+0	933+0	513+1	378+1	432+2	477+1	138+2
7.5	394+1	230+2	511-1	167+0	362+1	237+2	465+1	230+2	-248+0	-234+0	914+0	560+1	381+1	463+2	474+1	148+2
8.0	386+1	245+2	775-1	149+0	355+1	252+2	459+1	246+2	-247+0	-151+0	913+0	605+1	382+1	493+2	472+1	159+2
8.5	380+1	261+2	966-1	115+0	349+1	268+2	456+1	261+2	-222+0	-810-1	926+0	650+1	379+1	522+2	471+1	169+2
9.0	375+1	277+2	951-1	748-1	345+1	285+2	454+1	277+2	-182+0	-291-1	948+0	693+1	373+1	551+2	471+1	178+2
9.5	372+1	292+2	745-1	432-1	342+1	301+2	454+1	293+2	-136+0	379-2	976+0	735+1	359+1	581+2	469+1	188+2
10.0	371+1	308+2	461-1	277-1	341+1	317+2	456+1	308+2	-880-1	186-1	100+1	775+1	338+1	610+2	467+1	198+2

TABLE A1.2.3 Poisson's Ratio = 1/3, B/C = 2, Damping = 5%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	485+1	485+0	-460+0	-460-1	746+1	746+0	516+1	516+0	349+0	349-1	265+1	265+0	633+1	633+0	695+1	695+0
0.5	477+1	190+1	-552+0	-126-1	688+1	102+1	509+1	213+1	406+0	766-1	255+1	305+0	612+1	323+1	659+1	851+0
1.0	463+1	332+1	-562+0	131+0	596+1	209+1	505+1	377+1	473+0	435-1	234+1	481+0	573+1	591+1	594+1	152+1
1.5	445+1	479+1	-504+0	257+0	522+1	357+1	511+1	539+1	522+0	-290-1	215+1	759+0	525+1	870+1	541+1	255+1
2.0	427+1	631+1	-409+0	349+0	464+1	519+1	520+1	690+1	538+0	-126+0	198+1	108+1	471+1	116+2	506+1	372+1
2.5	409+1	788+1	-293+0	398+0	417+1	688+1	522+1	831+1	519+0	-225+0	183+1	142+1	415+1	147+2	489+1	493+1
3.0	395+1	947+1	-179+0	401+0	377+1	863+1	516+1	971+1	472+0	-314+0	168+1	178+1	364+1	179+2	484+1	607+1
3.5	385+1	111+2	-861-1	368+0	344+1	104+2	504+1	111+2	405+0	-386+0	153+1	215+1	325+1	212+2	483+1	711+1
4.0	379+1	127+2	-229-1	318+0	319+1	122+2	490+1	126+2	325+0	-442+0	139+1	255+1	301+1	246+2	479+1	811+1
4.5	375+1	142+2	115-1	264+0	304+1	141+2	478+1	141+2	235+0	-478+0	127+1	296+1	288+1	279+2	471+1	909+1
5.0	371+1	158+2	233-1	217+0	299+1	159+2	465+1	156+2	138+0	-492+0	115+1	339+1	278+1	311+2	462+1	101+2
5.5	368+1	173+2	212-1	184+0	304+1	176+2	453+1	171+2	402-1	-481+0	104+1	383+1	277+1	343+2	455+1	111+2
6.0	360+1	188+2	129-1	168+0	308+1	193+2	439+1	186+2	-485-1	-445+0	953+0	428+1	269+1	374+2	449+1	121+2
6.5	350+1	203+2	982-2	165+0	308+1	209+2	425+1	202+2	-122+0	-390+0	882+0	474+1	262+1	405+2	444+1	131+2
7.0	339+1	218+2	179-1	167+0	303+1	224+2	411+1	217+2	-173+0	-320+0	831+0	521+1	255+1	436+2	438+1	141+2
7.5	326+1	233+2	367-1	164+0	294+1	240+2	400+1	233+2	-200+0	-245+0	797+0	567+1	247+1	466+2	432+1	152+2
8.0	314+1	248+2	577-1	149+0	284+1	255+2	389+1	249+2	-204+0	-173+0	777+0	612+1	238+1	496+2	426+1	162+2
8.5	302+1	264+2	713-1	124+0	273+1	271+2	380+1	265+2	-189+0	-111+0	770+0	656+1	225+1	526+2	421+1	172+2
9.0	292+1	280+2	719-1	940-1	263+1	288+2	372+1	280+2	-160+0	-631-1	772+0	699+1	209+1	556+2	417+1	182+2
9.5	284+1	295+2	585-1	706-1	254+1	304+2	367+1	296+2	-125+0	-307-1	779+0	741+1	188+1	585+2	412+1	191+2
10.0	276+1	311+2	376-1	588-1	247+1	319+2	362+1	312+2	-878-1	-140-1	787+0	781+1	161+1	615+2	406+1	201+2

TABLE A1.3.1 Poisson's Ratio = 1/3, B/C = 3, Damping = 0%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	497+1	000+0	-507+0	000+0	105+2	000+0	546+1	000+0	325+0	000+0	207+1	000+0	657+1	000+0	903+1	000+0
0.5	498+1	147+1	-619+0	893-1	963+1	553+0	552+1	181+1	385+0	512-1	202+1	258-1	658+1	283+1	845+1	298+0
1.0	495+1	292+1	-556+0	285+0	831+1	253+1	572+1	362+1	459+0	322-1	189+1	141+0	650+1	568+1	758+1	148+1
1.5	490+1	438+1	-401+0	388+0	750+1	502+1	607+1	525+1	514+0	-319-1	177+1	319+0	638+1	844+1	707+1	313+1
2.0	481+1	585+1	-249+0	388+0	700+1	754+1	632+1	663+1	532+0	-116+0	166+1	522+0	608+1	112+2	698+1	487+1
2.5	470+1	738+1	-158+0	337+0	659+1	998+1	638+1	794+1	522+0	-195+0	156+1	742+0	560+1	140+2	716+1	642+1
3.0	459+1	896+1	-121+0	291+0	614+1	124+2	634+1	932+1	497+0	-266+0	146+1	975+0	507+1	170+2	731+1	769+1
3.5	453+1	106+2	-107+0	270+0	569+1	150+2	629+1	108+2	466+0	-332+0	137+1	122+1	460+1	202+2	730+1	887+1
4.0	452+1	122+2	-929-1	266+0	539+1	178+2	625+1	122+2	421+0	-399+0	128+1	147+1	420+1	235+2	722+1	101+2
4.5	452+1	138+2	-813-1	269+0	526+1	204+2	620+1	137+2	359+0	-460+0	119+1	173+1	388+1	269+2	713+1	115+2
5.0	454+1	154+2	-672-1	287+0	519+1	230+2	615+1	151+2	282+0	-510+0	110+1	200+1	366+1	303+2	708+1	128+2
5.5	455+1	169+2	-318-1	311+0	510+1	255+2	609+1	166+2	193+0	-542+0	102+1	228+1	359+1	337+2	702+1	141+2
6.0	456+1	184+2	272-1	317+0	498+1	280+2	602+1	181+2	975-1	-555+0	945+0	257+1	363+1	370+2	695+1	154+2
6.5	454+1	199+2	890-1	287+0	489+1	305+2	594+1	196+2	926-3	-546+0	875+0	288+1	372+1	402+2	688+1	168+2
7.0	454+1	214+2	123+0	235+0	482+1	331+2	584+1	211+2	-900-1	-516+0	816+0	319+1	382+1	433+2	686+1	181+2
7.5	451+1	229+2	130+0	181+0	481+1	356+2	572+1	227+2	-168+0	-466+0	768+0	351+1	390+1	464+2	682+1	195+2
8.0	447+1	244+2	117+0	137+0	486+1	381+2	561+1	242+2	-229+0	-400+0	731+0	383+1	394+1	494+2	676+1	208+2
8.5	440+1	259+2	884-1	105+0	494+1	405+2	552+1	258+2	-270+0	-327+0	705+0	414+1	393+1	523+2	667+1	221+2
9.0	433+1	274+2	548-1	998-1	500+1	428+2	545+1	273+2	-291+0	-252+0	692+0	446+1	387+1	553+2	662+1	235+2
9.5	426+1	290+2	417-1	110+0	498+1	450+2	538+1	289+2	-288+0	-178+0	689+0	477+1	379+1	582+2	660+1	248+2
10.0	418+1	305+2	462-1	125+0	488+1	472+2	532+1	305+2	-268+0	-113+0	694+0	508+1	370+1	612+2	656+1	262+2

TABLE A1.3.2 POISSON'S RATIO = 1/3, B/C = 3, DAMPING = 2%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	496+1	198+0	-507+0	-203-1	105+2	420+0	545+1	218+0	325+0	130-1	206+1	825-1	656+1	262+0	901+1	360+0
0.5	494+1	166+1	-612+0	655-1	957+1	955+0	547+1	202+1	380+0	641-1	201+1	108+0	649+1	306+1	845+1	652+0
1.0	489+1	311+1	-554+0	258+0	826+1	287+1	563+1	381+1	450+0	456-1	188+1	219+0	637+1	587+1	753+1	181+1
1.5	481+1	457+1	-407+0	363+0	742+1	530+1	594+1	541+1	503+0	-171-1	176+1	392+0	623+1	861+1	705+1	343+1
2.0	470+1	604+1	-262+0	371+0	690+1	778+1	617+1	679+1	522+0	-991-1	165+1	590+0	592+1	113+2	691+1	514+1
2.5	456+1	756+1	-173+0	327+0	647+1	102+2	623+1	811+1	513+0	-177+0	154+1	805+0	545+1	142+2	703+1	665+1
3.0	443+1	913+1	-135+0	285+0	601+1	126+2	619+1	950+1	491+0	-247+0	145+1	103+1	494+1	172+2	715+1	794+1
3.5	435+1	107+2	-117+0	263+0	557+1	152+2	613+1	109+2	461+0	-315+0	136+1	127+1	449+1	204+2	713+1	914+1
4.0	431+1	123+2	-104+0	254+0	527+1	179+2	608+1	124+2	418+0	-381+0	127+1	152+1	411+1	236+2	703+1	104+2
4.5	430+1	139+2	-920-1	254+0	512+1	205+2	602+1	139+2	359+0	-440+0	118+1	178+1	380+1	270+2	693+1	117+2
5.0	429+1	155+2	-743-1	266+0	505+1	231+2	594+1	153+2	286+0	-489+0	109+1	205+1	363+1	304+2	686+1	130+2
5.5	429+1	170+2	-375-1	283+0	496+1	256+2	586+1	168+2	202+0	-520+0	100+1	233+1	357+1	337+2	679+1	144+2
6.0	428+1	185+2	168-1	283+0	486+1	281+2	578+1	183+2	113+0	-532+0	929+0	262+1	361+1	371+2	670+1	157+2
6.5	426+1	200+2	717-1	255+0	478+1	307+2	568+1	198+2	223-1	-524+0	860+0	291+1	371+1	403+2	663+1	170+2
7.0	423+1	215+2	109+0	206+0	477+1	332+2	557+1	213+2	-634-1	-495+0	801+0	322+1	384+1	434+2	658+1	184+2
7.5	418+1	230+2	121+0	153+0	479+1	357+2	546+1	228+2	-138+0	-447+0	755+0	353+1	395+1	465+2	653+1	197+2
8.0	413+1	245+2	110+0	109+0	484+1	381+2	536+1	244+2	-196+0	-385+0	720+0	385+1	401+1	495+2	645+1	210+2
8.5	406+1	261+2	910-1	808-1	492+1	406+2	526+1	259+2	-237+0	-315+0	696+0	416+1	401+1	525+2	638+1	223+2
9.0	400+1	276+2	698-1	711-1	498+1	429+2	518+1	275+2	-258+0	-242+0	684+0	447+1	398+1	555+2	633+1	237+2
9.5	393+1	291+2	592-1	755-1	498+1	452+2	511+1	291+2	-261+0	-171+0	683+0	478+1	395+1	585+2	628+1	250+2
10.0	383+1	307+2	638-1	805-1	489+1	474+2	503+1	307+2	-246+0	-107+0	686+0	503+1	383+1	614+2	622+1	264+2

TABLE A1.3.3 Poisson's Ratio = 1/3, B/C = 3, Damping = 5%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	495+1	495+0	-507+0	-507-1	105+2	105+1	545+1	545+0	325+0	325-1	207+1	207+0	656+1	656+0	900+1	900+0
0.5	489+1	196+1	-610+0	298-1	957+1	157+1	541+1	234+1	377+0	847-1	200+1	232+0	640+1	345+1	844+1	118+1
1.0	480+1	341+1	-562+0	218+0	824+1	343+1	552+1	413+1	446+0	686-1	188+1	339+0	620+1	627+1	757+1	231+1
1.5	468+1	487+1	-426+0	326+0	734+1	581+1	576+1	575+1	498+0	977-2	175+1	508+0	598+1	902+1	701+1	389+1
2.0	452+1	635+1	-289+0	342+0	674+1	826+1	594+1	716+1	520+0	-682-1	164+1	702+0	559+1	117+2	682+1	555+1
2.5	435+1	786+1	-201+0	309+0	623+1	107+2	596+1	850+1	515+0	-144+0	153+1	914+0	506+1	146+2	686+1	707+1
3.0	418+1	943+1	-159+0	273+0	571+1	131+2	589+1	990+1	496+0	-213+0	143+1	114+1	449+1	176+2	692+1	837+1
3.5	405+1	110+2	-137+0	253+0	522+1	157+2	579+1	113+2	468+0	-280+0	133+1	138+1	396+1	208+2	686+1	960+1
4.0	396+1	126+2	-120+0	245+0	485+1	183+2	570+1	128+2	428+0	-344+0	124+1	162+1	350+1	240+2	673+1	109+2
4.5	389+1	142+2	-105+0	246+0	462+1	209+2	559+1	143+2	373+0	-402+0	114+1	187+1	312+1	273+2	660+1	122+2
5.0	384+1	157+2	-851-1	256+0	445+1	235+2	548+1	157+2	305+0	-449+0	105+1	214+1	286+1	307+2	649+1	135+2
5.5	379+1	173+2	-516-1	268+0	428+1	260+2	536+1	172+2	228+0	-480+0	963+0	241+1	270+1	340+2	637+1	148+2
6.0	373+1	188+2	-472-2	268+0	410+1	285+2	523+1	187+2	145+0	-495+0	881+0	270+1	262+1	373+2	625+1	161+2
6.5	366+1	203+2	425-1	247+0	395+1	310+2	509+1	202+2	611-1	-490+0	807+0	299+1	259+1	406+2	614+1	175+2
7.0	358+1	218+2	768-1	209+0	390+1	335+2	495+1	217+2	-187-1	-467+0	744+0	329+1	264+1	437+2	605+1	188+2
7.5	349+1	233+2	908-1	167+0	382+1	360+2	480+1	232+2	-885-1	-428+0	690+0	360+1	263+1	468+2	596+1	201+2
8.0	339+1	249+2	882-1	130+0	377+1	385+2	466+1	248+2	-144+0	-376+0	647+0	391+1	258+1	498+2	585+1	214+2
8.5	328+1	264+2	758-1	106+0	375+1	409+2	452+1	263+2	-185+0	-316+0	614+0	422+1	252+1	529+2	574+1	228+2
9.0	317+1	279+2	604-1	953-1	370+1	433+2	440+1	279+2	-208+0	-253+0	592+0	453+1	240+1	559+2	564+1	241+2
9.5	305+1	294+2	515-1	933-1	362+1	456+2	428+1	295+2	-215+0	-191+0	577+0	483+1	227+1	589+2	555+1	255+2
10.0	292+1	310+2	515-1	944-1	346+1	479+2	415+1	311+2	-208+0	-136+0	565+0	513+1	204+1	619+2	545+1	268+2

TABLE A1.4.1 POISSON'S RATIO = 1/3, B/C = 4, DAMPING = 0%

A_0	K_{11}	K_{15}	K_{55}	K_{22}	K_{24}	K_{44}	K_{33}	K_{66}
0.0	509+1 000+0	-548+0 000+0	136+2 000+0	571+1 000+0	308+0 000+0	172+1 000+0	679+1 000+0	114+2 000+0
0.5	512+1 154+1	-662+0 140+0	124+2 891+0	582+1 198+1	363+0 575-1	169+1 184-1	688+1 303+1	105+2 486+0
1.0	515+1 302+1	-523+0 363+0	107+2 384+1	619+1 389+1	438+0 485-1	160+1 966-1	702+1 596+1	947+1 228+1
1.5	517+1 445+1	-299+0 405+0	999+1 729+1	668+1 545+1	493+0 -686-2	151+1 216+0	710+1 861+1	909+1 460+1
2.0	512+1 589+1	-167+0 313+0	967+1 105+2	694+1 676+1	512+0 -750-1	143+1 355+0	687+1 112+2	935+1 678+1
2.5	504+1 737+1	-153+0 231+0	924+1 135+2	700+1 807+1	512+0 -136+0	136+1 510+0	644+1 139+2	972+1 846+1
3.0	495+1 888+1	-170+0 214+0	865+1 166+2	701+1 947+1	507+0 -195+0	128+1 673+0	594+1 168+2	980+1 989+1
3.5	487+1 104+2	-175+0 225+0	813+1 199+2	701+1 109+2	494+0 -259+0	122+1 841+0	538+1 197+2	972+1 114+2
4.0	479+1 120+2	-176+0 253+0	773+1 232+2	698+1 123+2	468+0 -323+0	115+1 102+1	481+1 229+2	965+1 131+2
4.5	473+1 136+2	-158+0 302+0	730+1 265+2	693+1 137+2	429+0 -384+0	108+1 120+1	432+1 262+2	958+1 147+2
5.0	469+1 152+2	-970-1 345+0	685+1 299+2	688+1 151+2	377+0 -439+0	101+1 139+1	399+1 296+2	949+1 163+2
5.5	467+1 168+2	-193-1 344+0	647+1 334+2	682+1 166+2	314+0 -487+0	941+0 158+1	378+1 330+2	940+1 180+2
6.0	468+1 183+2	358-1 306+0	622+1 369+2	676+1 180+2	242+0 -524+0	874+0 178+1	368+1 364+2	936+1 196+2
6.5	470+1 199+2	610-1 264+0	608+1 405+2	668+1 195+2	163+0 -547+0	811+0 199+1	366+1 397+2	931+1 213+2
7.0	472+1 214+2	707-1 228+0	608+1 440+2	660+1 210+2	799-1 -557+0	750+0 221+1	369+1 430+2	922+1 229+2
7.5	472+1 229+2	637-1 204+0	616+1 473+2	651+1 225+2	-464-2 -552+0	693+0 243+1	371+1 462+2	910+1 246+2
8.0	470+1 243+2	619-1 198+0	623+1 505+2	640+1 240+2	-862-1 -529+0	643+0 267+1	376+1 493+2	901+1 263+2
8.5	466+1 258+2	799-1 198+0	622+1 537+2	629+1 255+2	-162+0 -491+0	600+0 290+1	382+1 524+2	891+1 280+2
9.0	461+1 273+2	106+0 179+0	614+1 569+2	616+1 270+2	-226+0 -437+0	565+0 314+1	386+1 554+2	878+1 297+2
9.5	453+1 288+2	122+0 143+0	606+1 600+2	604+1 286+2	-276+0 -374+0	537+0 338+1	390+1 584+2	867+1 314+2
10.0	445+1 303+2	123+0 105+0	600+1 632+2	594+1 301+2	-309+0 -302+0	519+0 362+1	389+1 613+2	860+1 330+2

TABLE A1.4.2 POISSON'S RATIO = 1/3, B/C = 4, DAMPING = 2%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	508+1	203+0	-547+0	-219-1	136+2	545+0	571+1	228+0	307+0	123-1	172+1	686-1	678+1	271+0	113+2	453+0
0.5	508+1	173+1	-655+0	113+0	123+2	141+1	577+1	220+1	358+0	696-1	168+1	868-1	678+1	325+1	105+2	929+0
1.0	509+1	322+1	-525+0	333+0	107+2	427+1	609+1	408+1	429+0	609-1	159+1	162+0	687+1	616+1	946+1	263+1
1.5	507+1	466+1	-313+0	332+0	987+1	764+1	653+1	563+1	482+0	693-2	150+1	278+0	693+1	880+1	904+1	496+1
2.0	500+1	609+1	-184+0	303+0	950+1	108+2	678+1	693+1	501+0	-596-1	142+1	414+0	669+1	114+2	922+1	708+1
2.5	489+1	756+1	-165+0	229+0	905+1	138+2	684+1	826+1	503+0	-121+0	134+1	564+0	627+1	141+2	952+1	876+1
3.0	478+1	907+1	-177+0	209+0	846+1	169+2	684+1	965+1	499+0	-179+0	127+1	725+0	578+1	169+2	959+1	102+2
3.5	467+1	106+2	-183+0	217+0	794+1	202+2	684+1	111+2	487+0	-242+0	120+1	891+0	525+1	199+2	950+1	118+2
4.0	458+1	122+2	-182+0	240+0	753+1	235+2	680+1	125+2	462+0	-306+0	113+1	106+1	470+1	230+2	942+1	134+2
4.5	450+1	137+2	-160+0	281+0	711+1	267+2	674+1	139+2	425+0	-366+0	106+1	124+1	425+1	264+2	934+1	150+2
5.0	445+1	153+2	-104+0	315+0	668+1	301+2	667+1	153+2	376+0	-420+0	993+0	143+1	392+1	297+2	923+1	166+2
5.5	441+1	169+2	-337-1	312+0	632+1	336+2	660+1	168+2	317+0	-466+0	926+0	162+1	373+1	331+2	913+1	183+2
6.0	440+1	184+2	204-1	280+0	610+1	371+2	651+1	183+2	249+0	-502+0	860+0	182+1	366+1	365+2	905+1	200+2
6.5	440+1	200+2	507-1	239+0	600+1	406+2	642+1	197+2	174+0	-524+0	797+0	203+1	366+1	398+2	897+1	216+2
7.0	440+1	215+2	623-1	203+0	601+1	441+2	633+1	212+2	960-1	-533+0	737+0	225+1	371+1	430+2	885+1	232+2
7.5	439+1	230+2	643-1	179+0	609+1	474+2	623+1	227+2	162-1	-527+0	681+0	247+1	376+1	462+2	874+1	249+2
8.0	436+1	245+2	689-1	168+0	617+1	507+2	612+1	242+2	-618-1	-506+0	633+0	269+1	383+1	494+2	864+1	266+2
8.5	431+1	260+2	833-1	160+0	618+1	538+2	600+1	257+2	-133+0	-469+0	591+0	293+1	390+1	525+2	852+1	282+2
9.0	425+1	275+2	105+0	142+0	617+1	570+2	589+1	272+2	-195+0	-419+0	558+0	316+1	399+1	555+2	841+1	299+2
9.5	418+1	290+2	120+0	111+0	612+1	602+2	577+1	288+2	-243+0	-358+0	533+0	340+1	404+1	585+2	830+1	316+2
10.0	410+1	305+2	122+0	791-1	610+1	634+2	566+1	303+2	-276+0	-291+0	517+0	364+1	407+1	615+2	820+1	333+2

TABLE A1.4.3 POISSON'S RATIO = 1/3, B/C = 4, DAMPING = 5%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	507+1	507+0	-547+0	-547-1	136+2	136+1	570+1	570+0	308+0	308-1	172+1	172+0	679+1	679+0	113+2	113+1
0.5	503+1	204+1	-654+0	737-1	123+2	220+1	571+1	254+1	355+0	890-1	168+1	190+0	668+1	366+1	105+2	160+1
1.0	499+1	352+1	-539+0	291+0	106+2	498+1	596+1	442+1	424+0	825-1	159+1	263+0	669+1	657+1	945+1	330+1
1.5	494+1	497+1	-340+0	348+0	973+1	828+1	634+1	600+1	476+0	329-1	150+1	376+0	665+1	923+1	897+1	551+1
2.0	482+1	641+1	-215+0	285+0	923+1	114+2	654+1	734+1	499+0	-306-1	142+1	509+0	635+1	118+2	904+1	761+1
2.5	467+1	788+1	-187+0	220+0	869+1	144+2	656+1	868+1	503+0	-903-1	134+1	658+0	586+1	145+2	925+1	932+1
3.0	452+1	939+1	-191+0	200+0	804+1	175+2	653+1	101+2	501+0	-148+0	126+1	816+0	530+1	174+2	927+1	108+2
3.5	437+1	109+2	-193+0	206+0	744+1	208+2	648+1	115+2	490+0	-209+0	119+1	979+0	471+1	204+2	915+1	124+2
4.0	423+1	125+2	-189+0	228+0	694+1	240+2	641+1	129+2	468+0	-271+0	111+1	115+1	412+1	235+2	902+1	140+2
4.5	411+1	140+2	-167+0	263+0	644+1	273+2	631+1	143+2	433+0	-329+0	104+1	133+1	359+1	268+2	889+1	156+2
5.0	401+1	156+2	-119+0	291+0	593+1	307+2	620+1	158+2	388+0	-382+0	967+0	151+1	318+1	301+2	874+1	173+2
5.5	392+1	172+2	-588-1	293+0	549+1	341+2	609+1	172+2	334+0	-427+0	896+0	170+1	288+1	335+2	859+1	189+2
6.0	387+1	187+2	-834-2	271+0	519+1	376+2	597+1	187+2	269+0	-462+0	827+0	190+1	274+1	368+2	847+1	206+2
6.5	381+1	203+2	231-1	240+0	498+1	411+2	584+1	202+2	200+0	-486+0	761+0	210+1	264+1	401+2	833+1	222+2
7.0	376+1	218+2	389-1	211+0	486+1	445+2	570+1	217+2	127+0	-496+0	698+0	232+1	256+1	434+2	818+1	238+2
7.5	369+1	233+2	459-1	190+0	480+1	479+2	556+1	231+2	536-1	-494+0	639+0	253+1	251+1	466+2	802+1	255+2
8.0	362+1	248+2	519-1	178+0	475+1	511+2	541+1	246+2	-181-1	-477+0	587+0	276+1	248+1	497+2	786+1	272+2
8.5	352+1	263+2	640-1	167+0	465+1	543+2	525+1	262+2	-841-1	-446+0	540+0	298+1	245+1	528+2	770+1	288+2
9.0	341+1	278+2	794-1	152+0	453+1	575+2	509+1	277+2	-141+0	-403+0	501+0	321+1	241+1	559+2	753+1	305+2
9.5	329+1	293+2	908-1	129+0	439+1	607+2	494+1	292+2	-187+0	-352+0	470+0	345+1	236+1	589+2	737+1	322+2
10.0	317+1	308+2	925-1	104+0	425+1	639+2	479+1	308+2	-220+0	-295+0	446+0	368+1	228+1	619+2	722+1	339+2

TABLE A2.1.1 Poisson's Ratio = 0.45, B/C = 1, Damping = 0%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	524+1	000+0	-153+0	000+0	511+1	000+0	524+1	000+0	153+0	000+0	511+1	000+0	737+1	000+0	586+1	000+0
0.5	522+1	151+1	-226+0	466-1	482+1	125+0	522+1	151+1	226+0	-466-1	482+1	125+0	715+1	305+1	560+1	100+0
1.0	513+1	306+1	-291+0	185+0	425+1	677+0	513+1	306+1	291+0	-185+0	425+1	677+0	636+1	620+1	508+1	576+0
1.5	507+1	470+1	-330+0	361+0	373+1	148+1	507+1	470+1	330+0	-361+0	373+1	148+1	504+1	956+1	461+1	135+1
2.0	508+1	638+1	-336+0	570+0	326+1	239+1	508+1	638+1	336+0	-570+0	326+1	239+1	339+1	132+2	425+1	226+1
2.5	517+1	802+1	-285+0	798+0	281+1	333+1	517+1	802+1	285+0	-798+0	281+1	333+1	151+1	173+2	400+1	325+1
3.0	530+1	958+1	-170+0	101+1	236+1	429+1	530+1	958+1	170+0	-101+1	236+1	429+1	-497+0	218+2	385+1	428+1
3.5	541+1	111+2	-105-1	119+1	188+1	527+1	541+1	111+2	105-1	-119+1	188+1	527+1	-258+1	267+2	381+1	532+1
4.0	546+1	125+2	173+0	132+1	137+1	626+1	546+1	125+2	-173+0	-132+1	137+1	626+1	-462+1	321+2	386+1	632+1
4.5	544+1	139+2	360+0	141+1	815+0	729+1	544+1	139+2	-360+0	-141+1	815+0	729+1	-642+1	380+2	397+1	724+1
5.0	538+1	154+2	545+0	146+1	204+0	838+1	538+1	154+2	-545+0	-146+1	204+0	838+1	-789+1	444+2	409+1	809+1
5.5	530+1	169+2	728+0	150+1	-452+0	955+1	530+1	169+2	-728+0	-150+1	-452+0	955+1	-875+1	511+2	417+1	888+1
6.0	524+1	184+2	908+0	151+1	-114+1	108+2	524+1	184+2	-908+0	-151+1	-114+1	108+2	-898+1	578+2	421+1	965+1
6.5	520+1	199+2	109+1	149+1	-183+1	122+2	520+1	199+2	-109+1	-149+1	-183+1	122+2	-867+1	643+2	423+1	104+2
7.0	516+1	215+2	127+1	146+1	-251+1	137+2	516+1	215+2	-127+1	-146+1	-251+1	137+2	-792+1	706+2	423+1	112+2
7.5	511+1	230+2	145+1	138+1	-312+1	154+2	511+1	230+2	-145+1	-138+1	-312+1	154+2	-687+1	762+2	424+1	120+2
8.0	504+1	245+2	161+1	127+1	-364+1	171+2	504+1	245+2	-161+1	-127+1	-364+1	171+2	-575+1	813+2	425+1	128+2
8.5	496+1	260+2	175+1	113+1	-405+1	190+2	497+1	260+2	-174+1	-113+1	-405+1	190+2	-468+1	862+2	427+1	136+2
9.0	489+1	276+2	184+1	966+0	-433+1	209+2	489+1	276+2	-184+1	-966+0	-432+1	209+2	-380+1	909+2	428+1	144+2
9.5	484+1	292+2	189+1	789+0	-441+1	228+2	484+1	292+2	-188+1	-788+0	-440+1	228+2	-303+1	949+2	427+1	151+2
10.0	481+1	308+2	189+1	615+0	-434+1	247+2	481+1	308+2	-189+1	-615+0	-434+1	247+2	-263+1	991+2	425+1	159+2

TABLE A2.1.2 Poisson's Ratio = 0.45, B/C = 1, Damping = 2%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	523+1	209+0	-153+0	-611-2	511+1	205+0	523+1	209+0	153+0	611-2	511+1	205+0	736+1	295+0	585+1	234+0
0.5	517+1	171+1	-224+0	393-1	480+1	326+0	517+1	171+1	224+0	-393-1	480+1	326+0	706+1	330+1	559+1	332+0
1.0	507+1	326+1	-289+0	175+0	423+1	861+0	507+1	326+1	289+0	-175+0	423+1	861+0	624+1	644+1	507+1	796+0
1.5	498+1	489+1	-329+0	348+0	370+1	165+1	498+1	489+1	329+0	-348+0	370+1	165+1	496+1	981+1	460+1	155+1
2.0	497+1	655+1	-336+0	556+0	323+1	254+1	497+1	655+1	336+0	-555+0	323+1	254+1	331+1	135+2	423+1	244+1
2.5	504+1	819+1	-287+0	780+0	278+1	347+1	504+1	819+1	287+0	-780+0	278+1	347+1	142+1	177+2	397+1	342+1
3.0	514+1	975+1	-177+0	990+0	232+1	443+1	514+1	975+1	177+0	-990+0	232+1	443+1	-614+0	223+2	381+1	444+1
3.5	523+1	112+2	-217-1	117+1	184+1	541+1	523+1	112+2	218-1	-117+1	184+1	541+1	-271+1	274+2	375+1	540+1
4.0	526+1	127+2	158+0	130+1	133+1	642+1	526+1	127+2	-158+0	-130+1	133+1	642+1	-477+1	331+2	377+1	645+1
4.5	523+1	141+2	345+0	140+1	769+0	748+1	523+1	141+2	-345+0	-140+1	769+0	748+1	-664+1	392+2	385+1	737+1
5.0	517+1	156+2	532+0	146+1	153+0	860+1	517+1	156+2	-532+0	-146+1	154+0	860+1	-811+1	458+2	395+1	822+1
5.5	509+1	171+2	714+0	150+1	-515+0	981+1	509+1	171+2	-714+0	-150+1	-515+0	981+1	-903+1	527+2	401+1	902+1
6.0	502+1	186+2	900+0	151+1	-120+1	111+2	502+1	186+2	-900+0	-151+1	-120+1	111+2	-909+1	598+2	404+1	980+1
6.5	496+1	201+2	109+1	150+1	-191+1	126+2	496+1	201+2	-109+1	-150+1	-191+1	126+2	-863+1	666+2	405+1	106+2
7.0	491+1	217+2	128+1	147+1	-259+1	141+2	491+1	217+2	-128+1	-147+1	-259+1	141+2	-775+1	731+2	405+1	114+2
7.5	485+1	232+2	146+1	140+1	-321+1	158+2	485+1	232+2	-146+1	-140+1	-320+1	158+2	-662+1	791+2	405+1	122+2
8.0	478+1	247+2	163+1	129+1	-373+1	176+2	478+1	247+2	-163+1	-129+1	-373+1	176+2	-529+1	846+2	406+1	130+2
8.5	470+1	263+2	176+1	116+1	-415+1	195+2	470+1	263+2	-176+1	-116+1	-414+1	195+2	-419+1	896+2	407+1	137+2
9.0	463+1	278+2	186+1	998+0	-440+1	215+2	463+1	278+2	-186+1	-997+0	-440+1	215+2	-300+1	944+2	408+1	145+2
9.5	457+1	294+2	192+1	824+0	-450+1	235+2	457+1	294+2	-191+1	-824+0	-450+1	235+2	-220+1	988+2	406+1	153+2
10.0	453+1	310+2	193+1	651+0	-443+1	255+2	453+1	310+2	-193+1	-651+0	-443+1	255+2	-160+1	103+3	405+1	161+2

TABLE A2.1.3 POISSON'S RATIO = 0.45, B/C = 1, DAMPING = 5%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	523+1	523+0	-152+0	-152-1	511+1	511+0	523+1	523+0	152+0	152-1	511+1	511+0	736+1	736+0	584+1	584+0
0.5	513+1	202+1	-224+0	282-1	480+1	631+0	513+1	202+1	224+0	-282-1	480+1	631+0	697+1	375+1	559+1	681+0
1.0	498+1	357+1	-292+0	160+0	423+1	115+1	498+1	357+1	292+0	-160+0	423+1	115+1	607+1	688+1	507+1	113+1
1.5	485+1	520+1	-335+0	330+0	368+1	192+1	485+1	520+1	335+0	-330+0	368+1	192+1	472+1	102+2	459+1	186+1
2.0	478+1	686+1	-344+0	531+0	319+1	279+1	478+1	686+1	344+0	-531+0	319+1	279+1	300+1	140+2	421+1	274+1
2.5	480+1	849+1	-300+0	749+0	272+1	371+1	480+1	849+1	300+0	-749+0	272+1	371+1	104+1	181+2	392+1	369+1
3.0	484+1	101+2	-201+0	957+0	224+1	465+1	484+1	101+2	201+0	-957+0	224+1	465+1	-107+1	227+2	373+1	469+1
3.5	487+1	116+2	-588-1	113+1	174+1	563+1	487+1	116+2	588-1	-113+1	174+1	563+1	-325+1	277+2	364+1	570+1
4.0	486+1	130+2	107+0	127+1	120+1	664+1	486+1	130+2	-107+0	-127+1	120+1	664+1	-537+1	333+2	362+1	667+1
4.5	479+1	145+2	283+0	137+1	620+0	770+1	479+1	145+2	-283+0	-137+1	620+0	770+1	-730+1	393+2	366+1	759+1
5.0	469+1	159+2	459+0	144+1	-141-1	881+1	469+1	159+2	-459+0	-144+1	-138-1	881+1	-887+1	458+2	371+1	845+1
5.5	457+1	174+2	635+0	149+1	-689+0	100+2	457+1	174+2	-635+0	-149+1	-689+0	100+2	-994+1	525+2	374+1	926+1
6.0	447+1	190+2	816+0	151+1	-137+1	113+2	447+1	190+2	-816+0	-151+1	-137+1	113+2	-102+2	593+2	375+1	100+2
6.5	437+1	205+2	993+0	151+1	-207+1	127+2	437+1	205+2	-993+0	-151+1	-207+1	127+2	-101+2	660+2	374+1	108+2
7.0	427+1	220+2	117+1	148+1	-275+1	142+2	427+1	220+2	-117+1	-148+1	-275+1	143+2	-962+1	723+2	371+1	116+2
7.5	417+1	235+2	134+1	142+1	-338+1	159+2	417+1	235+2	-134+1	-142+1	-337+1	159+2	-883+1	783+2	369+1	124+2
8.0	406+1	251+2	149+1	133+1	-392+1	176+2	406+1	251+2	-149+1	-133+1	-391+1	176+2	-791+1	838+2	367+1	132+2
8.5	394+1	266+2	162+1	121+1	-435+1	195+2	394+1	266+2	-162+1	-121+1	-435+1	195+2	-704+1	890+2	365+1	140+2
9.0	383+1	282+2	172+1	107+1	-465+1	214+2	383+1	282+2	-172+1	-107+1	-465+1	214+2	-627+1	939+2	363+1	148+2
9.5	373+1	297+2	178+1	920+0	-480+1	233+2	373+1	297+2	-178+1	-920+0	-480+1	233+2	-565+1	984+2	360+1	156+2
10.0	365+1	313+2	180+1	771+0	-481+1	252+2	365+1	313+2	-180+1	-771+0	-481+1	252+2	-526+1	103+3	356+1	163+2

TABLE A2.2.1 POISSON'S RATIO = 0.45, B/C = 2, DAMPING = 0%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	514+1	000+0	-174+0	000+0	879+1	000+0	560+1	000+0	135+0	000+0	312+1	000+0	754+1	000+0	714+1	000+0
0.5	512+1	144+1	-264+0	993-1	811+1	349+0	561+1	173+1	193+0	-180-1	300+1	478-1	737+1	319+1	676+1	169+0
1.0	505+1	291+1	-285+0	308+0	695+1	169+1	567+1	350+1	263+0	-109+0	274+1	276+0	672+1	650+1	609+1	909+0
1.5	494+1	444+1	-245+0	514+0	599+1	351+1	588+1	524+1	314+0	-245+0	249+1	631+0	571+1	992+1	556+1	203+1
2.0	485+1	600+1	-168+0	706+0	514+1	543+1	616+1	682+1	329+0	-410+0	228+1	103+1	438+1	135+2	525+1	330+1
2.5	478+1	759+1	-585-1	877+0	430+1	736+1	637+1	825+1	304+0	-576+0	208+1	144+1	273+1	172+2	516+1	461+1
3.0	474+1	921+1	749-1	102+1	341+1	930+1	645+1	964+1	253+0	-730+0	186+1	187+1	848+0	213+2	523+1	583+1
3.5	474+1	108+2	220+0	114+1	241+1	113+2	645+1	111+2	185+0	-873+0	163+1	231+1	-116+1	259+2	534+1	692+1
4.0	478+1	124+2	377+0	124+1	127+1	134+2	645+1	125+2	100+0	-101+1	140+1	276+1	-312+1	310+2	541+1	792+1
4.5	484+1	140+2	549+0	131+1	375-1	157+2	647+1	140+2	-747-3	-113+1	116+1	322+1	-493+1	364+2	542+1	891+1
5.0	488+1	155+2	735+0	135+1	-123+1	182+2	648+1	155+2	-117+0	-124+1	900+0	368+1	-649+1	421+2	542+1	993+1
5.5	489+1	169+2	924+0	135+1	-246+1	210+2	648+1	169+2	-246+0	-133+1	625+0	417+1	-777+1	481+2	545+1	110+2
6.0	487+1	184+2	110+1	132+1	-364+1	239+2	644+1	184+2	-381+0	-140+1	330+0	467+1	-873+1	542+2	549+1	120+2
6.5	481+1	199+2	126+1	125+1	-472+1	271+2	638+1	199+2	-521+0	-146+1	182-1	519+1	-932+1	604+2	552+1	129+2
7.0	475+1	214+2	139+1	115+1	-563+1	305+2	632+1	213+2	-662+0	-149+1	-309+0	573+1	-962+1	665+2	552+1	139+2
7.5	468+1	229+2	150+1	104+1	-629+1	340+2	625+1	228+2	-802+0	-151+1	-652+0	630+1	-957+1	726+2	550+1	149+2
8.0	462+1	245+2	157+1	905+0	-664+1	377+2	618+1	243+2	-940+0	-152+1	-101+1	691+1	-937+1	784+2	548+1	158+2
8.5	457+1	260+2	160+1	771+0	-669+1	413+2	610+1	258+2	-108+1	-151+1	-139+1	756+1	-904+1	842+2	546+1	168+2
9.0	453+1	276+2	159+1	647+0	-644+1	448+2	603+1	273+2	-121+1	-149+1	-176+1	826+1	-858+1	895+2	545+1	178+2
9.5	450+1	292+2	155+1	550+0	-601+1	481+2	596+1	289+2	-135+1	-146+1	-213+1	900+1	-814+1	949+2	542+1	187+2
10.0	448+1	307+2	149+1	488+0	-540+1	511+2	589+1	304+2	-149+1	-141+1	-250+1	981+1	-768+1	100+3	538+1	197+2

TABLE A2.2.2 POISSON'S RATIO = 0.45, B/C = 2, DAMPING = 2%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	513+1	205+0	-173+0	-695-2	878+1	352+0	559+1	224+0	135+0	541-2	312+1	125+0	754+1	302+0	713+1	285+0
0.5	508+1	164+1	-261+0	897-1	806+1	690+0	557+1	194+1	191+0	-119-1	299+1	171+0	727+1	346+1	675+1	450+0
1.0	498+1	310+1	-285+0	294+0	691+1	200+1	560+1	370+1	259+0	-101+0	272+1	392+0	660+1	673+1	608+1	117+1
1.5	486+1	462+1	-250+0	499+0	594+1	377+1	577+1	544+1	311+0	-235+0	248+1	738+0	560+1	102+2	555+1	226+1
2.0	475+1	618+1	-176+0	691+0	508+1	566+1	602+1	701+1	327+0	-396+0	226+1	113+1	429+1	138+2	522+1	352+1
2.5	466+1	777+1	-690-1	862+0	424+1	759+1	620+1	845+1	306+0	-560+0	205+1	154+1	265+1	176+2	510+1	480+1
3.0	460+1	938+1	634-1	101+1	334+1	955+1	627+1	985+1	258+0	-713+0	184+1	196+1	753+0	219+2	514+1	601+1
3.5	458+1	110+2	210+0	113+1	233+1	116+2	627+1	113+2	191+0	-856+0	161+1	240+1	-128+1	266+2	522+1	710+1
4.0	460+1	126+2	367+0	123+1	119+1	138+2	625+1	128+2	109+0	-990+0	138+1	285+1	-327+1	318+2	527+1	811+1
4.5	463+1	141+2	538+0	131+1	-594-3	161+2	625+1	142+2	835-2	-111+1	113+1	331+1	-511+1	375+2	527+1	911+1
5.0	466+1	156+2	727+0	135+1	-135+1	187+2	625+1	157+2	-108+0	-122+1	873+0	378+1	-670+1	434+2	526+1	101+2
5.5	465+1	171+2	920+0	136+1	-259+1	216+2	624+1	172+2	-237+0	-132+1	599+0	427+1	-790+1	497+2	527+1	111+2
6.0	462+1	186+2	110+1	133+1	-378+1	246+2	619+1	186+2	-373+0	-139+1	305+0	479+1	-883+1	561+2	529+1	121+2
6.5	456+1	201+2	126+1	127+1	-487+1	279+2	613+1	201+2	-514+0	-145+1	-811-2	532+1	-940+1	626+2	531+1	131+2
7.0	449+1	216+2	140+1	118+1	-581+1	315+2	606+1	216+2	-656+0	-149+1	-339+0	589+1	-959+1	690+2	530+1	141+2
7.5	442+1	231+2	152+1	106+1	-649+1	351+2	599+1	230+2	-799+0	-152+1	-687+0	649+1	-945+1	754+2	528+1	151+2
8.0	435+1	247+2	160+1	937+0	-683+1	389+2	591+1	245+2	-940+0	-153+1	-105+1	712+1	-915+1	815+2	526+1	160+2
8.5	429+1	262+2	163+1	805+0	-684+1	426+2	583+1	260+2	-108+1	-152+1	-143+1	780+1	-861+1	874+2	524+1	170+2
9.0	424+1	278+2	163+1	683+0	-657+1	463+2	574+1	276+2	-122+1	-151+1	-181+1	853+1	-801+1	931+2	522+1	180+2
9.5	421+1	293+2	160+1	582+0	-609+1	497+2	566+1	291+2	-136+1	-147+1	-219+1	930+1	-735+1	986+2	516+1	190+2
10.0	419+1	308+2	155+1	512+0	-544+1	529+2	560+1	306+2	-150+1	-142+1	-255+1	101+2	-664+1	104+3	515+1	199+2

TABLE A2.2.3 POISSON'S RATIO = 0.45, B/C = 2, DAMPING = 5%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	513+1	513+0	-173+0	-173-1	878+1	878+0	559+1	559+0	135+0	135-1	312+1	312+0	753+1	753+0	711+1	711+0
0.5	504+1	195+1	-262+0	760-1	807+1	121+1	551+1	228+1	190+0	-249-2	299+1	359+0	717+1	391+1	675+1	674+0
1.0	490+1	341+1	-292+0	276+0	690+1	248+1	549+1	404+1	260+0	-890-1	272+1	573+0	641+1	718+1	608+1	157+1
1.5	473+1	493+1	-263+0	478+0	589+1	421+1	561+1	577+1	313+0	-218+0	247+1	908+0	533+1	106+2	553+1	264+1
2.0	458+1	648+1	-196+0	668+0	499+1	606+1	579+1	736+1	333+0	-374+0	225+1	129+1	394+1	142+2	518+1	386+1
2.5	444+1	807+1	-963-1	841+0	410+1	798+1	592+1	882+1	317+0	-534+0	203+1	169+1	223+1	181+2	501+1	512+1
3.0	434+1	967+1	273-1	989+0	315+1	994+1	595+1	102+2	274+0	-686+0	180+1	211+1	268+0	223+2	499+1	632+1
3.5	427+1	113+2	166+0	111+1	209+1	120+2	591+1	117+2	213+0	-829+0	157+1	254+1	-182+1	270+2	503+1	741+1
4.0	424+1	129+2	316+0	122+1	916+0	141+2	586+1	132+2	136+0	-963+0	133+1	299+1	-389+1	322+2	503+1	844+1
4.5	421+1	144+2	479+0	130+1	-348+0	165+2	581+1	146+2	424-1	-109+1	107+1	345+1	-581+1	377+2	501+1	944+1
5.0	418+1	159+2	655+0	135+1	-165+1	191+2	576+1	161+2	-651-1	-120+1	800+0	392+1	-752+1	435+2	497+1	105+2
5.5	414+1	174+2	836+0	136+1	-291+1	218+2	571+1	176+2	-186+0	-129+1	515+0	441+1	-885+1	497+2	495+1	115+2
6.0	406+1	189+2	101+1	134+1	-413+1	248+2	562+1	190+2	-314+0	-137+1	211+0	492+1	-993+1	559+2	493+1	125+2
6.5	396+1	204+2	116+1	129+1	-524+1	280+2	553+1	205+2	-446+0	-143+1	-110+0	546+1	-107+2	623+2	491+1	135+2
7.0	385+1	219+2	129+1	121+1	-620+1	314+2	542+1	220+2	-582+0	-148+1	-448+0	602+1	-111+2	686+2	488+1	144+2
7.5	374+1	234+2	140+1	112+1	-692+1	350+2	531+1	235+2	-717+0	-151+1	-801+0	661+1	-112+2	748+2	483+1	154+2
8.0	363+1	250+2	148+1	101+1	-738+1	386+2	519+1	250+2	-853+0	-152+1	-117+1	724+1	-112+2	809+2	478+1	164+2
8.5	353+1	265+2	153+1	896+0	-756+1	422+2	507+1	265+2	-988+0	-152+1	-154+1	790+1	-110+2	868+2	473+1	174+2
9.0	344+1	281+2	154+1	791+0	-749+1	457+2	494+1	280+2	-112+1	-151+1	-192+1	862+1	-106+2	925+2	468+1	183+2
9.5	336+1	296+2	152+1	702+0	-722+1	491+2	482+1	295+2	-126+1	-149+1	-229+1	938+1	-103+2	980+2	462+1	193+2
10.0	329+1	312+2	149+1	638+0	-682+1	522+2	471+1	310+2	-138+1	-144+1	-264+1	102+2	-988+1	103+3	456+1	203+2

TABLE A2.3.1 Poisson's Ratio = 0.45, B/C = 3, Damping = 0%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	522+1	000+0	-190+0	000+0	124+2	000+0	595+1	000+0	127+0	000+0	243+1	000+0	782+1	000+0	936+1	000+0
0.5	522+1	148+1	-288+0	150+0	113+2	663+0	602+1	195+1	178+0	-761-2	236+1	290-1	772+1	344+1	877+1	314+0
1.0	519+1	297+1	-246+0	410+0	962+1	298+1	626+1	390+1	243+0	-810-1	220+1	169+0	730+1	696+1	786+1	157+1
1.5	515+1	445+1	-116+0	605+0	841+1	590+1	672+1	563+1	288+0	-197+0	204+1	388+0	668+1	104+2	733+1	333+1
2.0	507+1	593+1	272-1	721+0	741+1	881+1	711+1	706+1	297+0	-328+0	190+1	635+0	568+1	138+2	724+1	518+1
2.5	496+1	746+1	138+0	795+0	634+1	116+2	728+1	840+1	282+0	-451+0	176+1	896+0	426+1	174+2	748+1	684+1
3.0	486+1	904+1	223+0	869+0	503+1	144+2	732+1	979+1	259+0	-567+0	163+1	117+1	259+1	212+2	774+1	819+1
3.5	479+1	107+2	314+0	955+0	349+1	174+2	734+1	113+2	231+0	-683+0	149+1	146+1	835+0	254+2	784+1	942+1
4.0	477+1	123+2	428+0	103+1	185+1	207+2	738+1	127+2	191+0	-801+0	134+1	174+1	-996+0	299+2	784+1	107+2
4.5	479+1	139+2	555+0	109+1	225+0	243+2	740+1	142+2	137+0	-918+0	119+1	203+1	-286+1	347+2	785+1	120+2
5.0	482+1	154+2	678+0	112+1	-138+1	280+2	741+1	156+2	671-1	-103+1	103+1	233+1	-468+1	399+2	788+1	133+2
5.5	486+1	170+2	798+0	114+1	-299+1	320+2	741+1	171+2	-155-1	-114+1	858+0	263+1	-635+1	453+2	788+1	146+2
6.0	490+1	185+2	921+0	113+1	-452+1	362+2	743+1	186+2	-111+0	-123+1	682+0	294+1	-783+1	510+2	786+1	159+2
6.5	492+1	200+2	104+1	110+1	-587+1	407+2	743+1	200+2	-217+0	-132+1	496+0	326+1	-911+1	568+2	783+1	172+2
7.0	491+1	215+2	113+1	106+1	-701+1	453+2	740+1	215+2	-330+0	-138+1	300+0	359+1	-102+2	627+2	784+1	185+2
7.5	489+1	230+2	120+1	101+1	-796+1	500+2	736+1	229+2	-448+0	-144+1	957-1	393+1	-110+2	688+2	784+1	198+2
8.0	484+1	245+2	127+1	963+0	-870+1	548+2	731+1	244+2	-568+0	-148+1	-117+0	429+1	-117+2	749+2	781+1	211+2
8.5	477+1	260+2	132+1	917+0	-919+1	596+2	725+1	259+2	-689+0	-151+1	-340+0	465+1	-121+2	810+2	777+1	224+2
9.0	470+1	275+2	136+1	873+0	-946+1	642+2	716+1	273+2	-807+0	-153+1	-573+0	504+1	-123+2	870+2	774+1	237+2
9.5	462+1	290+2	139+1	841+0	-968+1	688+2	707+1	288+2	-926+0	-153+1	-814+0	544+1	-123+2	931+2	772+1	249+2
10.0	455+1	306+2	144+1	809+0	-984+1	734+2	696+1	303+2	-104+1	-153+1	-106+1	587+1	-121+2	991+2	767+1	262+2

TABLE A2.3.2 POISSON'S RATIO = 0.45, B/C = 3, DAMPING = 2%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	521+1	209+0	-190+0	-762-2	124+2	497+0	595+1	238+0	127+0	509-2	243+1	972-1	782+1	313+0	935+1	374+0
0.5	518+1	168+1	-285+0	139+0	112+2	114+1	597+1	218+1	176+0	-210-2	235+1	125+0	761+1	371+1	875+1	682+0
1.0	513+1	316+1	-249+0	394+0	955+1	341+1	618+1	412+1	240+0	-738-1	218+1	261+0	718+1	720+1	784+1	191+1
1.5	506+1	464+1	-126+0	590+0	332+1	625+1	659+1	584+1	284+0	-187+0	203+1	474+0	655+1	106+2	730+1	362+1
2.0	497+1	612+1	110-1	709+0	730+1	913+1	694+1	728+1	295+0	-315+0	188+1	716+0	556+1	141+2	717+1	544+1
2.5	484+1	764+1	123+0	788+0	623+1	119+2	710+1	863+1	284+0	-437+0	175+1	974+0	417+1	177+2	735+1	708+1
3.0	472+1	922+1	213+0	867+0	492+1	148+2	713+1	100+2	263+0	-553+0	161+1	125+1	252+1	217+2	757+1	845+1
3.5	464+1	108+2	306+0	955+0	338+1	178+2	715+1	115+2	235+0	-669+0	147+1	152+1	732+0	261+2	765+1	970+1
4.0	460+1	124+2	421+0	103+1	173+1	212+2	716+1	130+2	195+0	-786+0	132+1	181+1	-113+1	307+2	765+1	110+2
4.5	460+1	140+2	550+0	109+1	826-1	249+2	717+1	144+2	142+0	-903+0	117+1	210+1	-301+1	357+2	764+1	123+2
5.0	460+1	156+2	676+0	112+1	-155+1	287+2	717+1	159+2	728-1	-101+1	101+1	240+1	-481+1	411+2	765+1	136+2
5.5	462+1	172+2	799+0	114+1	-318+1	328+2	717+1	174+2	-984-2	-112+1	840+0	270+1	-648+1	467+2	764+1	149+2
6.0	464+1	187+2	924+0	114+1	-475+1	372+2	717+1	188+2	-105+0	-122+1	663+0	302+1	-796+1	526+2	760+1	162+2
6.5	464+1	202+2	104+1	112+1	-615+1	418+2	715+1	203+2	-210+0	-130+1	476+0	334+1	-924+1	587+2	757+1	175+2
7.0	462+1	217+2	115+1	108+1	-725+1	467+2	712+1	217+2	-324+0	-137+1	282+0	368+1	-102+2	650+2	757+1	188+2
7.5	459+1	232+2	123+1	103+1	-820+1	516+2	707+1	232+2	-442+0	-143+1	766-1	403+1	-110+2	713+2	755+1	201+2
8.0	454+1	246+2	129+1	982+0	-895+1	566+2	701+1	246+2	-563+0	-148+1	-138+0	440+1	-116+2	777+2	752+1	214+2
8.5	447+1	261+2	135+1	934+0	-941+1	616+2	694+1	261+2	-684+0	-151+1	-363+0	478+1	-119+2	841+2	748+1	227+2
9.0	440+1	277+2	140+1	893+0	-967+1	666+2	685+1	276+2	-806+0	-153+1	-598+0	519+1	-119+2	905+2	744+1	239+2
9.5	433+1	292+2	143+1	856+0	-981+1	714+2	676+1	291+2	-926+0	-154+1	-840+0	561+1	-117+2	968+2	739+1	252+2
10.0	425+1	307+2	147+1	825+0	-995+1	761+2	665+1	306+2	-104+1	-154+1	-110+1	605+1	-117+2	103+3	732+1	265+2

TABLE A2.3.3 POISSON'S RATIO = 0.45, B/C = 3, DAMPING = 5%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	520+1	520+0	-190+0	-190-1	124+2	124+1	594+1	594+0	127+0	127-1	243+1	243+0	782+1	782+0	933+1	933+0
0.5	513+1	200+1	-287+0	123+0	112+2	187+1	591+1	253+1	175+0	662-2	235+1	272+0	751+1	418+1	875+1	123+1
1.0	504+1	347+1	-261+0	373+0	953+1	407+1	605+1	447+1	240+0	-626-1	218+1	403+0	697+1	766+1	784+1	242+1
1.5	493+1	495+1	-149+0	568+0	822+1	685+1	639+1	621+1	286+0	-172+0	202+1	610+0	624+1	111+2	726+1	409+1
2.0	479+1	644+1	-200-1	695+0	712+1	969+1	669+1	768+1	301+0	-296+0	187+1	847+0	516+1	146+2	707+1	587+1
2.5	463+1	796+1	875-1	781+0	596+1	125+2	680+1	906+1	294+0	-416+0	173+1	110+1	371+1	182+2	717+1	750+1
3.0	446+1	953+1	177+0	864+0	460+1	153+2	681+1	105+2	276+0	-531+0	159+1	137+1	200+1	222+2	731+1	889+1
3.5	434+1	111+2	270+0	952+0	302+1	184+2	678+1	119+2	250+0	-647+0	144+1	164+1	143+0	265+2	736+1	102+2
4.0	425+1	127+2	378+0	103+1	133+1	217+2	676+1	134+2	214+0	-763+0	129+1	192+1	-179+1	311+2	732+1	115+2
4.5	419+1	143+2	497+0	109+1	-379+0	253+2	672+1	149+2	164+0	-878+0	113+1	221+1	-375+1	361+2	728+1	128+2
5.0	415+1	159+2	618+0	113+1	-208+1	292+2	668+1	163+2	995-1	-989+0	964+0	251+1	-563+1	414+2	724+1	141+2
5.5	412+1	175+2	738+0	115+1	-376+1	332+2	663+1	178+2	230-1	-109+1	788+0	281+1	-741+1	469+2	719+1	154+2
6.0	408+1	190+2	856+0	116+1	-537+1	375+2	659+1	193+2	-651-1	-119+1	605+0	313+1	-901+1	527+2	712+1	167+2
6.5	403+1	205+2	967+0	115+1	-685+1	420+2	652+1	207+2	-163+0	-127+1	411+0	345+1	-104+2	587+2	705+1	180+2
7.0	397+1	220+2	107+1	112+1	-805+1	468+2	645+1	222+2	-269+0	-135+1	210+0	379+1	-115+2	648+2	701+1	193+2
7.5	389+1	235+2	115+1	108+1	-912+1	516+2	636+1	237+2	-379+0	-141+1	-132-2	414+1	-125+2	710+2	695+1	206+2
8.0	380+1	250+2	122+1	104+1	-997+1	564+2	626+1	251+2	-493+0	-146+1	-222+0	450+1	-132+2	773+2	688+1	219+2
8.5	370+1	265+2	127+1	996+0	-106+2	613+2	616+1	266+2	-608+0	-149+1	-451+0	488+1	-137+2	836+2	681+1	232+2
9.0	359+1	280+2	132+1	957+0	-111+2	662+2	603+1	281+2	-723+0	-152+1	-688+0	528+1	-140+2	899+2	673+1	245+2
9.5	348+1	295+2	136+1	923+0	-114+2	709+2	591+1	296+2	-839+0	-153+1	-932+0	570+1	-141+2	961+2	664+1	257+2
10.0	335+1	311+2	141+1	896+0	-117+2	756+2	575+1	311+2	-948+0	-154+1	-119+1	613+1	-143+2	102+3	654+1	270+2

TABLE A2.4.1 Poisson's Ratio = 0.45, B/C = 4, Damping = 0%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	532+1	000+0	-205+0	000+0	161+2	000+0	626+1	000+0	121+0	000+0	202+1	000+0	810+1	000+0	119+2	000+0
0.5	535+1	154+1	-302+0	201+0	145+2	107+1	639+1	215+1	167+0	-139-2	197+1	200-1	807+1	368+1	110+2	519+0
1.0	538+1	304+1	-186+0	494+0	124+2	453+1	683+1	422+1	227+0	-635-1	186+1	116+0	792+1	736+1	991+1	244+1
1.5	540+1	450+1	263-1	640+0	111+2	861+1	746+1	587+1	264+0	-163+0	175+1	265+0	760+1	107+2	951+1	494+1
2.0	535+1	593+1	184+0	661+0	102+2	124+2	785+1	720+1	272+0	-268+0	165+1	435+0	682+1	140+2	983+1	730+1
2.5	524+1	741+1	252+0	672+0	889+1	160+2	800+1	854+1	267+0	-364+0	154+1	621+0	563+1	174+2	103+2	911+1
3.0	513+1	893+1	296+0	722+0	720+1	197+2	808+1	996+1	260+0	-459+0	145+1	816+0	421+1	211+2	106+2	106+2
3.5	504+1	105+2	355+0	781+0	536+1	237+2	816+1	114+2	249+0	-559+0	135+1	101+1	261+1	249+2	107+2	122+2
4.0	497+1	121+2	416+0	831+0	353+1	280+2	819+1	128+2	229+0	-663+0	124+1	122+1	819+0	289+2	107+2	138+2
4.5	492+1	137+2	472+0	889+0	161+1	324+2	821+1	143+2	198+0	-768+0	113+1	143+1	-108+1	333+2	108+2	154+2
5.0	491+1	153+2	545+0	955+0	-421+0	371+2	823+1	157+2	156+0	-873+0	102+1	164+1	-301+1	380+2	107+2	170+2
5.5	493+1	169+2	637+0	100+1	-243+1	421+2	826+1	172+2	101+0	-975+0	900+0	185+1	-492+1	430+2	107+2	187+2
6.0	496+1	184+2	729+0	103+1	-434+1	473+2	827+1	186+2	358-1	-107+1	775+0	207+1	-676+1	483+2	107+2	203+2
6.5	499+1	200+2	816+0	105+1	-620+1	527+2	828+1	201+2	-399-1	-116+1	644+0	229+1	-846+1	538+2	107+2	220+2
7.0	502+1	215+2	906+0	107+1	-796+1	583+2	828+1	215+2	-124+0	-125+1	507+0	252+1	-100+2	596+2	107+2	236+2
7.5	502+1	230+2	999+0	107+1	-956+1	641+2	827+1	230+2	-217+0	-132+1	363+0	276+1	-114+2	655+2	107+2	252+2
8.0	500+1	244+2	108+1	106+1	-110+2	700+2	823+1	244+2	-315+0	-138+1	213+0	300+1	-125+2	715+2	107+2	268+2
8.5	496+1	259+2	117+1	105+1	-123+2	761+2	818+1	259+2	-417+0	-144+1	550-1	325+1	-133+2	777+2	106+2	284+2
9.0	491+1	274+2	126+1	103+1	-135+2	822+2	813+1	273+2	-523+0	-148+1	-109+0	351+1	-140+2	840+2	106+2	301+2
9.5	483+1	289+2	134+1	994+0	-145+2	885+2	805+1	288+2	-630+0	-151+1	-280+0	377+1	-144+2	901+2	106+2	317+2
10.0	475+1	304+2	142+1	947+0	-154+2	948+2	796+1	302+2	-738+0	-153+1	-458+0	405+1	-146+2	963+2	105+2	333+2

TABLE A2.4.2 Poisson's Ratio = 0.45, B/C = 4, Damping = 2%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	531+1	213+0	-204+0	-818-2	161+2	645+0	626+1	250+0	121+0	484-2	202+1	809-1	809+1	324+0	119+2	475+0
0.5	530+1	174+1	-300+0	188+0	144+2	168+1	633+1	239+1	165+0	376-2	196+1	100+0	796+1	396+1	110+2	983+0
1.0	531+1	324+1	-192+0	476+0	123+2	506+1	673+1	445+1	224+0	-568-1	185+1	193+0	778+1	760+1	989+1	286+1
1.5	530+1	469+1	907-2	626+0	110+2	904+1	731+1	610+1	261+0	-154+0	174+1	338+0	745+1	110+2	946+1	530+1
2.0	524+1	612+1	164+0	655+0	999+1	128+2	768+1	745+1	270+0	-256+0	163+1	505+0	668+1	143+2	969+1	762+1
2.5	512+1	760+1	237+0	673+0	872+1	164+2	782+1	880+1	267+0	-352+0	153+1	688+0	552+1	178+2	101+2	945+1
3.0	499+1	912+1	287+0	724+0	706+1	202+2	789+1	102+2	262+0	-447+0	143+1	880+0	412+1	215+2	104+2	110+2
3.5	488+1	107+2	348+0	783+0	523+1	243+2	795+1	116+2	252+0	-547+0	133+1	108+1	252+1	255+2	104+2	126+2
4.0	479+1	123+2	412+0	836+0	336+1	287+2	797+1	131+2	232+0	-650+0	123+1	128+1	713+0	297+2	104+2	142+2
4.5	473+1	139+2	473+0	897+0	141+1	332+2	797+1	145+2	202+0	-754+0	112+1	148+1	-121+1	342+2	105+2	158+2
5.0	470+1	154+2	550+0	960+0	-645+0	380+2	799+1	160+2	160+0	-858+0	100+1	169+1	-315+1	391+2	104+2	174+2
5.5	470+1	170+2	643+0	101+1	-269+1	432+2	799+1	175+2	107+0	-960+0	885+0	191+1	-508+1	443+2	104+2	190+2
6.0	470+1	186+2	739+0	104+1	-461+1	486+2	799+1	189+2	412-1	-106+1	760+0	213+1	-686+1	498+2	104+2	207+2
6.5	472+1	201+2	829+0	107+1	-648+1	543+2	798+1	204+2	-343-1	-115+1	629+0	236+1	-854+1	556+2	104+2	223+2
7.0	472+1	216+2	924+0	108+1	-826+1	601+2	797+1	218+2	-119+0	-123+1	491+0	259+1	-101+2	616+2	103+2	240+2
7.5	472+1	231+2	102+1	108+1	-986+1	662+2	795+1	233+2	-210+0	-130+1	346+0	283+1	-114+2	678+2	103+2	256+2
8.0	469+1	246+2	111+1	108+1	-113+2	724+2	791+1	247+2	-310+0	-137+1	197+0	308+1	-124+2	742+2	103+2	272+2
8.5	465+1	261+2	119+1	106+1	-126+2	787+2	787+1	261+2	-413+0	-143+1	391-1	333+1	-133+2	806+2	102+2	288+2
9.0	460+1	276+2	128+1	104+1	-138+2	852+2	781+1	276+2	-520+0	-147+1	-126+0	360+1	-138+2	871+2	102+2	305+2
9.5	452+1	290+2	137+1	101+1	-147+2	917+2	773+1	290+2	-629+0	-151+1	-297+0	388+1	-142+2	937+2	101+2	321+2
10.0	444+1	306+2	145+1	966+0	-155+2	984+2	764+1	305+2	-738+0	-153+1	-476+0	417+1	-142+2	100+3	100+2	337+2

TABLE A2.4.3 POISSON'S RATIO = 0.45, B/C = 4, DAMPING = 5%

A_0	K_{11}		K_{15}		K_{55}		K_{22}		K_{24}		K_{44}		K_{33}		K_{66}	
0.0	531+1	531+0	-204+0	-204-1	161+2	161+1	625+1	625+0	121+0	121-1	202+1	202+0	809+1	809+0	119+2	119+1
0.5	526+1	206+1	-303+0	170+0	144+2	262+1	626+1	277+1	164+0	120-1	196+1	222+0	784+1	445+1	110+2	168+1
1.0	522+1	356+1	-210+0	453+0	123+2	590+1	659+1	483+1	223+0	-462-1	185+1	312+0	755+1	808+1	987+1	350+1
1.5	516+1	502+1	-222-1	609+0	108+2	980+1	709+1	651+1	262+0	-140+0	174+1	452+0	711+1	115+2	938+1	588+1
2.0	505+1	646+1	126+0	653+0	969+1	136+2	740+1	790+1	275+0	-240+0	163+1	616+0	625+1	148+2	950+1	817+1
2.5	490+1	794+1	203+0	679+0	832+1	172+2	751+1	927+1	276+0	-335+0	152+1	795+0	502+1	184+2	984+1	100+2
3.0	473+1	946+1	256+0	731+0	660+1	209+2	755+1	107+2	273+0	-429+0	142+1	983+0	356+1	221+2	100+2	116+2
3.5	458+1	110+2	315+0	792+0	471+1	250+2	756+1	121+2	264+0	-527+0	131+1	118+1	188+1	260+2	100+2	132+2
4.0	445+1	126+2	377+0	848+0	276+1	294+2	755+1	136+2	246+0	-629+0	120+1	138+1	170-1	302+2	100+2	148+2
4.5	434+1	142+2	438+0	908+0	715+0	339+2	752+1	150+2	218+0	-732+0	109+1	158+1	-196+1	347+2	997+1	164+2
5.0	426+1	158+2	511+0	970+0	-140+1	387+2	748+1	165+2	180+0	-834+0	972+0	179+1	-398+1	396+2	990+1	181+2
5.5	420+1	173+2	597+0	102+1	-353+1	438+2	745+1	180+2	131+0	-935+0	848+0	200+1	-599+1	447+2	981+1	197+2
6.0	416+1	189+2	688+0	106+1	-555+1	491+2	741+1	194+2	690-1	-103+1	719+0	222+1	-785+1	501+2	975+1	214+2
6.5	412+1	204+2	776+0	108+1	-751+1	547+2	736+1	209+2	-107-2	-112+1	584+0	245+1	-962+1	558+2	969+1	230+2
7.0	408+1	219+2	866+0	110+1	-938+1	604+2	730+1	223+2	-791-1	-120+1	441+0	268+1	-113+2	617+2	962+1	246+2
7.5	402+1	234+2	954+0	111+1	-111+2	664+2	723+1	238+2	-165+0	-128+1	292+0	292+1	-127+2	677+2	954+1	263+2
8.0	395+1	249+2	104+1	110+1	-127+2	724+2	716+1	252+2	-257+0	-134+1	138+0	317+1	-139+2	739+2	946+1	279+2
8.5	387+1	264+2	112+1	110+1	-141+2	786+2	707+1	267+2	-353+0	-140+1	-241-1	342+1	-149+2	803+2	937+1	295+2
9.0	377+1	279+2	121+1	108+1	-154+2	850+2	696+1	281+2	-453+0	-145+1	-193+0	369+1	-157+2	866+2	926+1	311+2
9.5	366+1	294+2	129+1	105+1	-165+2	914+2	685+1	296+2	-556+0	-149+1	-368+0	396+1	-162+2	930+2	915+1	328+2
10.0	354+1	309+2	136+1	101+1	-174+2	979+2	673+1	310+2	-660+0	-152+1	-549+0	425+1	-165+2	994+2	903+1	344+2

B. TABLES OF FOUNDATION INPUT MOTIONS FOR HORIZONTALLY INCIDENT SH-WAVES (UNDAMPED CASE)

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(1) The tables of input motions are organized on the basis of two integers (TABLE B. I. J):
I = 1, 2 correspond to $\nu = 0.33, 0.45$
J = 1, 2, 3, 4 correspond to B/C = 1, 2, 3, 4

(2) The notation -104 - 1 661 + 0 denotes the complex number -0.0104 + i0.661.

TABLE B1.1 POISSON'S RATIO = 0.33, B/C = 1

	SH-WAVES (θ = 0°)				SH-WAVES (θ = 90°)		
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_1^*/S	$L\Phi_2^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	956+0 762-3	929-3 -797-4	420-5 -244+0	0.5	956+0 762-3	-929-3 797-4	-420-5 244+0
1.0	828+0 822-2	396-2 -140-2	470-4 -455+0	1.0	828+0 822-2	-396-2 140-2	-470-4 455+0
1.5	637+0 371-1	779-2 -759-2	167-2 -600+0	1.5	637+0 371-1	-779-2 759-2	-167-2 600+0
2.0	427+0 879-1	469-2 -178-1	100-1 -661+0	2.0	427+0 879-1	-469-2 178-1	-100-1 661+0
2.5	233+0 136+0	-545-2 -238-1	368-1 -633+0	2.5	233+0 136+0	545-2 238-1	-368-1 633+0
3.0	712-1 164+0	-164-1 -220-1	813-1 -534+0	3.0	712-1 164+0	164-1 220-1	-819-1 535+0
3.5	-526-1 163+0	-239-1 -145-1	136+0 -393+0	3.5	-526-1 163+0	239-1 145-1	-136+0 393+0
4.0	-135+0 136+0	-255-1 -487-2	183+0 -237+0	4.0	-135+0 136+0	255-1 487-2	-183+0 237+0
4.5	-178+0 912-1	-215-1 337-2	206+0 -851-1	4.5	-178+0 912-1	215-1 -337-2	-206+0 851-1
5.0	-184+0 371-1	-147-1 798-2	200+0 482-1	5.0	-184+0 371-1	147-1 -799-2	-200+0 -482-1
5.5	-158+0 -162-1	-776-2 865-2	167+0 149+0	5.5	-158+0 -161-1	775-2 -867-2	-167+0 -149+0
6.0	-110+0 -601-1	-239-2 679-2	112+0 211+0	6.0	-110+0 -601-1	239-2 -678-2	-112+0 -211+0
6.5	-529-1 -887-1	857-3 400-2	466-1 231+0	6.5	-529-1 -887-1	-858-3 -400-2	-466-1 -231+0
7.0	496-2 -992-1	235-2 135-2	-202-1 210+0	7.0	494-2 -992-1	-235-2 -135-2	202-1 -210+0
7.5	536-1 -906-1	263-2 -641-3	-777-1 158+0	7.5	536-1 -906-1	-264-2 656-3	776-1 -158+0
8.0	871-1 -674-1	216-2 -188-2	-117+0 877-1	8.0	871-1 -674-1	-217-2 189-2	117+0 -877-1
8.5	101+0 -347-1	127-2 -239-2	-133+0 107-1	8.5	101+0 -347-1	-128-2 240-2	133+0 -107-1
9.0	906-1 636-3	224-3 -226-2	-127+0 -600-1	9.0	906-1 619-3	-232-3 227-2	127+0 600-1
9.5	756-1 325-1	-770-3 -170-2	-991-1 -113+0	9.5	755-1 323-1	772-3 171-2	991-1 113+0
10.0	433-1 557-1	-157-2 -860-3	-571-1 -142+0	10.0	433-1 557-1	158-2 852-3	571-1 142+0

TABLE B1.2 Poisson's Ratio = 0.33, B/C = 2

SH-Waves ($\theta = 0°$)

A_0	U_2^*/S		$L\Phi_1^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	916+0	874-3	206-2	-835-4	146-2	-362+0
1.0	683+0	215-1	103-1	-390-2	152-1	-622+0
1.5	385+0	792-1	170-1	-194-1	438-1	-718+0
2.0	123+0	132+0	729-2	-366-1	912-1	-636+0
2.5	-626-1	139+0	-111-1	-387-1	154+0	-422+0
3.0	-164+0	993-1	-234-1	-262-1	205+0	-166+0
3.5	-184+0	333-1	-230-1	-867-2	208+0	587-1
4.0	-140+0	-330-1	-119-1	419-2	154+0	208+0
4.5	-603-1	-796-1	158-2	791-2	610-1	262+0
5.0	227-1	-934-1	110-1	446-2	-392-1	224+0
5.5	825-1	-735-1	137-1	-141-2	-115+0	122+0
6.0	104+0	-311-1	104-1	-578-2	-144+0	-238-2
6.5	876-1	165-1	414-2	-654-2	-123+0	-106+0
7.0	441-1	531-1	-158-2	-387-2	-635-1	-161+0
7.5	-859-2	666-1	-477-2	242-3	114-1	-155+0
8.0	-514-1	550-1	-511-2	375-2	754-1	-982-1
8.5	-711-1	251-1	-344-2	530-2	107+0	-145-1
9.0	-640-1	-105-1	-103-2	482-2	996-1	648-1
9.5	-354-1	-392-1	103-2	290-2	577-1	113+0
10.0	241-2	-512-1	213-2	521-3	-513-3	118+0

SH-Waves ($\theta = 90°$)

A_0	U_1^*/S		$L\Phi_2^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	978+0	150-3	-180-3	157-4	154-2	119+0
1.0	912+0	224-2	-676-3	243-3	164-1	234+0
1.5	805+0	128-1	-246-2	186-2	467-1	320+0
2.0	670+0	378-1	-271-2	506-2	705-1	362+0
2.5	526+0	750-1	-410-3	869-2	692-1	370+0
3.0	383+0	116+0	437-2	104-1	460-1	364+0
3.5	251+0	151+0	922-2	879-2	145-1	348+0
4.0	135+0	175+0	119-1	505-2	-169-1	321+0
4.5	358-1	185+0	122-1	120-2	-470-1	280+0
5.0	-451-1	179+0	111-1	-172-2	-740-1	228+0
5.5	-107+0	160+0	932-2	-364-2	-981-1	170+0
6.0	-150+0	130+0	731-2	-464-2	-114+0	110+0
6.5	-175+0	944-1	544-2	-466-2	-122+0	528-1
7.0	-183+0	543-1	389-2	-468-2	-123+0	-522-3
7.5	-173+0	145-1	261-2	-435-2	-114+0	-465-1
8.0	-152+0	-222-1	143-2	-387-2	-991-1	-837-1
8.5	-120+0	-535-1	373-3	-323-2	-776-1	-110+0
9.0	-824-1	-771-1	-474-3	-242-2	-520-1	-125+0
9.5	-417-1	-924-1	-102-2	-155-2	-248-1	-128+0
10.0	-192-2	-982-1	-128-2	-758-3	182-2	-121+0

TABLE B1.3 Poisson's Ratio = 0.33, B/C = 3

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	SH-Waves ($\theta = 0°$)				SH-Waves ($\theta = 90°$)		
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_1^*/S	$L\Phi_2^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	879+0 150-2	344-2 -871-4	172-2 -400+0	0.5	985+0 400-3	-297-4 300-4	181-2 703-1
1.0	561+0 352-1	156-1 -640-2	160-1 -639+0	1.0	940+0 121-2	-716-3 176-3	185-1 139+0
1.5	211+0 102+0	207-1 -263-1	516-1 -635+0	1.5	866+0 689-2	-122-2 671-3	477-1 185+0
2.0	-439-1 127+0	662-2 -401-1	113+0 -419+0	2.0	768+0 221-1	-162-2 217-2	637-1 203+0
2.5	-170+0 853-1	-115-1 -315-1	170+0 -129+0	2.5	655+0 460-1	-806-3 431-2	604-1 214+0
3.0	-175+0 969-2	-160-1 -864-2	163+0 109+0	3.0	540+0 788-1	142-2 536-2	507-1 224+0
3.5	-965-1 -580-1	-426-2 105-1	889-1 232+0	3.5	421+0 112+0	382-2 515-2	400-1 228+0
4.0	853-2 -869-1	111-1 153-1	-154-1 220+0	4.0	312+0 145+0	554-2 390-2	273-1 224+0
4.5	649-1 -686-1	182-1 880-2	-990-1 109+0	4.5	211+0 170+0	646-2 221-2	122-1 211+0
5.0	105+0 -184-1	140-1 -160-3	-126+0 -306-1	5.0	121+0 187+0	651-2 554-3	-579-2 195+0
5.5	697-1 339-1	274-2 -487-2	-893-1 -131+0	5.5	413-1 191+0	598-2 -582-3	-230-1 174+0
6.0	594-2 623-1	-796-2 -321-2	-128-1 -152+0	6.0	-264-1 186+0	546-2 -122-2	-391-1 149+0
6.5	-503-1 553-1	-124-1 183-2	610-1 -965-1	6.5	-822-1 173+0	506-2 -181-2	-529-1 121+0
7.0	-731-1 206-1	-983-2 563-2	965-1 -170-2	7.0	-125+0 151+0	453-2 -241-2	-644-1 925-1
7.5	-560-1 -210-1	-322-2 543-2	791-1 808-1	7.5	-156+0 124+0	376-2 -282-2	-727-1 626-1
8.0	-127-1 -473-1	278-2 168-2	236-1 112+0	8.0	-174+0 933-1	297-2 -300-2	-768-1 338-1
8.5	314-1 -463-1	524-2 -279-2	-387-1 838-1	8.5	-181+0 600-1	220-2 -298-2	-777-1 664-2
9.0	544-1 -215-1	406-2 -532-20	-753-1 160-1	9.0	-177+0 267-1	149-2 -281-2	-746-1 -176-1
9.5	468-1 122-1	969-3 -465-2	-701-1 -526-1	9.5	-163+0 -502-2	899-3 -249-2	-686-1 -385-1
10.0	157-1 363-1	-180-2 -167-2	-292-1 -872-1	10.0	-142+0 -337-1	423-3 -216-2	-593-1 -552-1

TABLE B1.4 Poisson's Ratio = 0.33, B/C = 4

SH-Waves ($\theta = 0°$)

A_0	U_2^*/S		$L\Phi_1^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	842+0	424-2	496-2	-568-3	164-2	-414+0
1.0	456+0	489-1	197-1	-895-2	165-1	-611+0
1.5	824-1	111+0	218-1	-297-1	578-1	-512+0
2.0	-136+0	100+0	394-2	-352-1	124+0	-224+0
2.5	-183+0	267-1	-113-1	-155-1	144+0	554-1
3.0	-103+0	-497-1	-782-2	115-1	826-1	206+0
3.5	175-1	-816-1	773-2	226-1	-189-1	193+0
4.0	966-1	-552-1	161-1	146-1	-954-1	670-1
4.5	961-1	311-2	985-2	-122-3	-102+0	-726-1
5.0	343-1	513-1	-523-2	-798-2	-434-1	-139+0
5.5	-380-1	581-1	-156-1	-575-2	361-1	-107+0
6.0	-735-1	248-1	-144-1	716-3	830-1	-120-1
6.5	-550-1	-211-1	-411-2	414-2	693-1	754-1
7.0	-314-2	-488-1	645-2	184-2	112-1	101+0
7.5	435-1	-393-1	103-1	-281-2	-482-1	572-1
8.0	549-1	-489-2	658-2	-503-2	-694-1	-189-1
8.5	282-1	294-1	-423-3	-274-2	-419-1	-735-1
9.0	-144-1	403-1	-521-2	193-2	114-1	-729-1
9.5	-426-1	224-1	-529-2	524-2	523-1	-235-1
10.0	-393-1	-926-2	-193-2	463-2	538-1	364-1

SH-Waves ($\theta = 90°$)

A_0	U_1^*/S		$L\Phi_2^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	986+0	204-3	-815-4	893-4	177-2	463-1
1.0	956+0	-348-3	-322-3	-101-4	167-1	909-1
1.5	900+0	430-2	-690-3	304-3	384-1	115+0
2.0	824+0	128-1	-102-2	117-2	464-1	126+0
2.5	732+0	287-1	-612-3	235-2	456-1	138+0
3.0	634+0	522-1	398-3	306-2	445-1	145+0
3.5	538+0	834-1	158-2	317-2	417-1	153+0
4.0	434+0	111+0	270-2	268-2	348-1	154+0
4.5	341+0	140+0	344-2	211-2	261-1	151+0
5.0	251+0	163+0	377-2	147-2	164-1	147+0
5.5	169+0	180+0	406-2	906-3	594-2	139+0
6.0	958-1	191+0	424-2	130-3	-506-2	129+0
6.5	297-1	192+0	411-2	-612-3	-151-1	116+0
7.0	-275-1	187+0	380-2	-121-2	-246-1	102+0
7.5	-758-1	175+0	336-2	-164-2	-329-1	860-1
8.0	-114+0	158+0	286-2	-189-2	-400-1	692-1
8.5	-145+0	136+0	242-2	-197-2	-457-1	519-1
9.0	-166+0	116+0	207-2	-199-2	-494-1	348-1
9.5	-178+0	831-1	171-2	-204-2	-515-1	182-1
10.0	-182+0	545-1	132-2	-202-2	-514-1	270-2

TABLE B2.1 Poisson's Ratio = 0.45, B/C = 1

	SH-Waves ($\theta = 0°$)				SH-Waves ($\theta = 90°$)		
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_1^*/S	$L\Phi_2^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	956+0 278-3	305-3 -237-4	-355-5 -244+0	0.5	956+0 278-3	-305-3 237-4	355-5 244+0
1.0	830+0 742-2	174-2 -857-3	113-3 -454+0	1.0	830+0 742-2	-174-2 857-3	-113-3 454+0
1.5	639+0 367-1	372-2 -621-2	765-3 -601+0	1.5	639+0 367-1	-372-2 621-2	-765-3 601+0
2.0	431+0 856-1	193-3 -148-1	107-1 -663+0	2.0	431+0 856-1	-193-3 148-1	-107-1 663+0
2.5	237+0 133+0	-945-2 -208-1	360-1 -635+0	2.5	237+0 133+0	945-2 208-1	-360-1 635+0
3.0	761-1 160+0	-205-1 -206-1	815-1 -538+0	3.0	761-1 160+0	205-1 206-1	-815-1 538+0
3.5	-475-1 158+0	-283-1 -152-1	135+0 -398+0	3.5	-475-1 158+0	283-1 152-1	-135+0 398+0
4.0	-131+0 132+0	-309-1 -729-2	130+0 -242+0	4.0	-131+0 132+0	309-1 737-2	-180+0 242+0
4.5	-175+0 880-1	-277-1 -312-3	203+0 -898-1	4.5	-175+0 880-1	277-1 313-3	-204+0 903-1
5.0	-181+0 348-1	-203-1 339-2	198+0 434-1	5.0	-181+0 348-1	203-1 -339-2	-198+0 -433-1
5.5	-155+0 -172-1	-121-1 351-2	165+0 145+0	5.5	-155+0 -172-1	121-1 -351-2	-166+0 -145+0
6.0	-108+0 -602-1	-475-2 918-3	112+0 207+0	6.0	-108+0 -602-1	475-2 -914-3	-112+0 -207+0
6.5	-511-1 -884-1	528-3 -272-2	474-1 228+0	6.5	-511-1 -884-1	-527-3 272-2	-474-1 -228+0
7.0	671-2 -978-1	361-2 -616-2	-185-1 208+0	7.0	671-2 -978-1	-361-2 616-2	185-1 -208+0
7.5	552-1 -893-1	473-2 -826-2	-751-1 157+0	7.5	552-1 -893-1	-473-2 826-2	750-1 -157+0
8.0	884-1 -664-1	457-2 -894-2	-114+0 871-1	8.0	884-1 -664-1	-460-2 894-2	114+0 -871-1
8.5	102+0 -340-1	379-2 -809-2	-130+0 104-1	8.5	102+0 -341-1	-376-2 814-2	130+0 -104-1
9.0	971-1 113-2	280-2 -616-2	-123+0 -591-1	9.0	971-1 111-2	-280-2 616-2	123+0 591-1
9.5	755-1 326-1	196-2 -359-2	-966-1 -112+0	9.5	755-1 326-1	-199-2 362-2	966-1 112+0
10.0	432-1 556-1	141-2 -110-2	-551-1 -140+0	10.0	432-1 556-1	-139-2 110-2	551-1 140+0

TABLE B2.2 Poisson's Ratio = 0.45, B/C = 2

	SH-Waves (θ = 0°)				SH-Waves (θ = 90°)		
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_1^*/S	$L\Phi_2^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	918+0 314-3	936-3 -110-4	142-2 -366+0	0.5	977+0 159-2	-111-3 554-4	147-2 115+0
1.0	686+0 209-1	506-2 -294-2	144-1 -629+0	1.0	912+0 290-2	-387-3 204-3	159-1 226+0
1.5	391+0 774-1	811-2 -156-1	429-1 -729+0	1.5	806+0 121-1	-122-2 137-2	457-1 308+0
2.0	130+0 129+0	-854-3 -313-1	905-1 -648+0	2.0	672+0 373-1	-948-3 401-2	680-1 347+0
2.5	-548-1 136+0	-167-1 -360-1	154+0 -433+0	2.5	528+0 742-1	150-2 698-2	650-1 353+0
3.0	-157+0 964-1	-269-1 -281-1	207+0 -177+0	3.0	385+0 113+0	628-2 882-2	409-1 347+0
3.5	-178+0 319-1	-249-1 -143-1	212+0 492-1	3.5	254+0 149+0	113-1 768-2	894-2 332+0
4.0	-137+0 -331-1	-122-1 -339-2	159+0 201+0	4.0	137+0 173+0	149-1 445-2	-228-1 305+0
4.5	-584-1 -776-1	423-2 686-3	667-1 258+0	4.5	372-1 182+0	165-1 740-3	-524-1 266+0
5.0	237-1 -899-1	165-1 -106-2	-333-1 223+0	5.0	-437-1 176+0	161-1 -257-2	-783-1 217+0
5.5	831-1 -699-1	209-1 -466-2	-109+0 123+0	5.5	-106+0 158+0	145-1 -503-2	-939-1 160+0
6.0	104+0 -284-1	173-1 -630-2	-139+0 144-2	6.0	-150+0 129+0	122-1 -637-2	-113+0 102+0
6.5	870-1 178-1	934-2 -435-2	-120+0 -103+0	6.5	-174+0 932-1	954-2 -652-2	-121+0 458-1
7.0	432-1 532-1	741-3 489-3	-617-1 -157+0	7.0	-181+0 534-1	714-2 -574-2	-120+0 -646-2
7.5	-934-2 657-1	-534-2 568-2	114-1 -152+0	7.5	-173+0 140-1	516-2 -459-2	-111+0 -512-1
8.0	-519-1 541-1	-785-2 890-2	741-1 -970-1	8.0	-151+0 -226-1	356-2 -311-2	-958-1 -876-1
8.5	-715-1 245-1	-715-2 877-2	105+0 -140-1	8.5	-119+0 -539-1	239-2 -162-2	-740-1 -112+0
9.0	-642-1 -110-1	-475-2 557-2	971-1 643-1	9.0	-817-1 -772-1	153-2 -264-3	-488-1 -126+0
9.5	-352-1 -391-1	-186-2 923-3	560-1 113+0	9.5	-410-1 -920-1	934-3 852-3	-219-1 -129+0
10.0	296-2 -510-1	385-3 -351-2	-135-2 117+0	10.0	-118-2 -980-1	486-3 169-2	418-2 -122+0

TABLE B2.3 POISSON'S RATIO = 0.45, B/C = 3

	SH-WAVES (θ = 0°)				SH-WAVES (θ = 90°)		
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_1^*/S	$L\Phi_2^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	881+0 200-2	134-2 -145-3	166-2 -404+0	0.5	936+0 -286-4	126-4 -127-5	169-2 660-1
1.0	566+0 349-1	760-2 -497-2	160-1 -645+0	1.0	940+0 368-3	-237-3 738-4	174-1 131+0
1.5	218+0 100+0	945-2 -216-1	501-1 -644+0	1.5	866+0 644-2	-567-3 558-3	449-1 172+0
2.0	-348-1 125+0	-255-2 -354-1	114+0 -429+0	2.0	770+0 210-1	-860-3 155-2	585-1 188+0
2.5	-162+0 834-1	-162-1 -317-1	172+0 -139+0	2.5	659+0 461-1	-976-4 321-2	533-1 196+0
3.0	-170+0 945-2	-169-1 -141-1	168+0 101+0	3.0	539+0 765-1	249-2 465-2	409-1 206+0
3.5	-938-1 -554-1	-230-2 342-2	939-1 225+0	3.5	422+0 109+0	525-2 457-2	292-1 211+0
4.0	860-2 -831-1	158-1 967-2	-103-1 217+0	4.0	313+0 142+0	750-2 334-2	160-1 208+0
4.5	841-1 -646-1	241-1 702-2	-950-1 110+0	4.5	211+0 167+0	887-2 136-2	909-4 199+0
5.0	104+0 -160-1	193-1 175-2	-122+0 -268-1	5.0	121+0 185+0	935-2 -804-3	-158-1 184+0
5.5	685-1 343-1	499-2 -609-3	-865-1 -126+0	5.5	422-1 190+0	894-2 -250-2	-311-1 164+0
6.0	518-2 608-1	-958-2 125-2	-120-1 -148+0	6.0	-257-1 185+0	811-2 -354-2	-452-1 140+0
6.5	-506-1 534-1	-170-1 477-2	600-1 -950-1	6.5	-815-1 172+0	712-2 -414-2	-573-1 113+0
7.0	-727-1 190-1	-147-1 551-2	941-1 -224-2	7.0	-124+0 150+0	610-2 -439-2	-668-1 849-1
7.5	-554-1 -215-1	-654-2 237-2	768-1 789-1	7.5	-155+0 123+0	509-2 -424-2	-734-1 560-1
8.0	-119-1 -466-1	278-2 -323-2	223-1 110+0	8.0	-173+0 923-1	416-2 -386-2	-765-1 275-1
8.5	320-1 -451-1	825-2 -776-2	-381-1 825-1	8.5	-180+0 593-1	339-2 -335-2	-761-1 127-2
9.0	548-1 -204-1	862-2 -831-2	-735-1 158-1	9.0	-176+0 260-1	271-2 -277-2	-724-1 -223-1
9.5	467-1 128-1	504-2 -439-2	-681-1 -522-1	9.5	-163+0 -554-2	211-2 -212-2	-658-1 -427-1
10.0	153-1 364-1	429-3 161-2	-276-1 -867-1	10.0	-141+0 -339-1	161-2 -149-2	-564-1 -567-1

TABLE B2.4 POISSON'S RATIO = 0.45, B/C = 4

SH-WAVES (θ = 0°)

A_0	U_2^*/S		$L\Phi_1^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	846+0	326-2	187-2	-230-3	147-2	-418+0
1.0	462+0	484-1	949-2	-698-2	150-1	-619+0
1.5	913-1	110+0	933-2	-248-1	574-1	-520+0
2.0	-127+0	990-1	-439-2	-326-1	126+0	-233+0
2.5	-177+0	260-1	-135-1	-188-1	148+0	462-1
3.0	-101+0	-479-1	-500-2	426-2	870-1	199+0
3.5	166-1	-778-1	127-1	165-1	-150-1	190+0
4.0	945-1	-517-1	214-1	131-1	-912-1	690-1
4.5	945-1	459-2	128-1	293-2	-986-1	-685-1
5.0	338-1	503-1	-562-2	-334-2	-417-1	-135+0
5.5	-377-1	560-1	-190-1	-314-2	356-1	-104+0
6.0	-724-1	233-1	-186-1	-245-3	809-1	-124-1
6.5	-539-1	-214-1	-611-2	280-3	672-1	733-1
7.0	-230-2	-469-1	832-2	-279-2	105-1	992-1
7.5	436-1	-375-1	149-1	-548-2	-473-1	564-1
8.0	548-1	-360-2	112-1	-438-2	-675-1	-185-1
8.5	276-1	295-1	142-2	856-3	-401-1	-721-1
9.0	-150-1	394-1	-707-2	640-2	120-1	-715-1
9.5	-427-1	213-1	-940-2	783-2	512-1	-227-1
10.0	-389-1	-989-2	-576-2	384-2	523-1	364-1

SH-WAVES (θ = 90°)

A_0	U_1^*/S		$L\Phi_2^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	990+0	-969-3	-978-5	-250-4	163-2	425-1
1.0	957+0	701-5	-117-3	-109-3	155-1	834-1
1.5	899+0	402-2	-354-3	194-3	351-1	104+0
2.0	825+0	133-1	-515-3	828-3	407-1	113+0
2.5	735+0	286-1	-163-3	182-2	376-1	124+0
3.0	636+0	518-1	108-2	262-2	339-1	135+0
3.5	537+0	809-1	239-2	279-2	299-1	141+0
4.0	437+0	111+0	399-2	236-2	234-1	143+0
4.5	340+0	138+0	508-2	134-2	147-1	141+0
5.0	252+0	162+0	553-2	239-3	631-2	138+0
5.5	170+0	179+0	566-2	-721-3	-295-2	130+0
6.0	966-1	189+0	560-2	-161-2	-128-1	121+0
6.5	307-1	191+0	520-2	-223-2	-215-1	106+0
7.0	-265-1	186+0	477-2	-262-2	-298-1	949-1
7.5	-749-1	174+0	432-2	-284-2	-372-1	796-1
8.0	-114+0	157+0	383-2	-293-2	-431-1	631-1
8.5	-144+0	135+0	335-2	-286-2	-474-1	465-1
9.0	-165+0	109+0	293-2	-271-2	-501-1	296-1
9.5	-177+0	824-1	252-2	-250-2	-511-1	134-1
10.0	-181+0	542-1	211-2	-224-2	-507-1	-152-2

C. TABLES OF FOUNDATION INPUT MOTIONS FOR HORIZONTALLY INCIDENT SH-WAVES (DAMPED CASE, $\theta = 0^\circ$)

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(1) The tables are organized on the basis of two integers I and J. (TABLE C.I.J):
I = 1, 2 correspond to ν = 1/3, 0.45
J = 1, 2, 3, 4 correspond to B/C = 1, 2, 3, 4.

(2) The notation 637 + 0 372 - 1 denotes the complex number 0.637 + i0.0372.

TABLE C1.1 SH-WAVES ($\theta = 0°$), POISSON'S RATIO = 1/3, B/C = 1

DAMPING = 0%				DAMPING = 2%				DAMPING = 5%			
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	956+0 731-3	757-3 -727-4	925-5 -244+0	0.5	956+0 115-2	733-3 383-4	-468-2 -244+0	0.5	957+0 477-2	847-3 -131-3	-115-1 -243+0
1.0	827+0 678-2	414-2 -117-2	137-3 -455+0	1.0	829+0 131-1	371-2 -125-2	-725-2 -454+0	1.0	831+0 240-1	365-2 -169-2	-180-1 -454+0
1.5	637+0 372-1	754-2 -766-2	177-2 -600+0	1.5	640+0 503-1	689-2 -780-2	-541-2 -601+0	1.5	646+0 677-1	602-2 -769-2	-143-1 -601+0
2.0	427+0 873-1	476-2 -178-1	104-1 -661+0	2.0	432+0 104+0	392-2 -172-1	918-2 -663+0	2.0	441+0 127+0	294-2 -161-1	653-2 -666+0
2.5	233+0 136+0	-537-2 -238-1	365-1 -633+0	2.5	238+0 154+0	-569-2 -225-1	428-1 -637+0	2.5	245+0 181+0	-584-2 -210-1	506-1 -645+0
3.0	717-1 163+0	-165-1 -220-1	828-1 -534+0	3.0	735-1 181+0	-160-1 -207-1	968-1 -542+0	3.0	772-1 208+0	-151-1 -194-1	116+0 -555+0
3.5	-519-1 162+0	-240-1 -145-1	135+0 -393+0	3.5	-541-1 177+0	-228-1 -138-1	157+0 -402+0	3.5	-565-1 200+0	-210-1 -131-1	188+0 -418+0
4.0	-134+0 136+0	-254-1 -472-2	181+0 -238+0	4.0	-142+0 146+0	-243-1 -502-2	208+0 -244+0	4.0	-152+0 164+0	-224-1 -543-2	246+0 -257+0
4.5	-177+0 911-1	-216-1 353-2	204+0 -865-1	4.5	-189+0 955-1	-207-1 241-2	232+0 -875-1	4.5	-205+0 104+0	-193-1 103-2	274+0 -931-1
5.0	-183+0 375-1	-148-1 811-2	199+0 463-1	5.0	-195+0 349-1	-145-1 656-2	224+0 517-1	5.0	-215+0 335-1	-140-1 465-2	264+0 567-1
5.5	-157+0 -158-1	-783-2 871-2	167+0 148+0	5.5	-169+0 -245-1	-810-2 729-2	186+0 160+0	5.5	-190+0 -362-1	-839-2 548-2	218+0 176+0
6.0	-110+0 -601-1	-244-2 673-2	112+0 210+0	6.0	-120+0 -736-1	-311-2 576-2	123+0 227+0	6.0	-137+0 -936-1	-389-2 442-2	143+0 254+0
6.5	-529-1 -881-1	812-3 390-2	469-1 229+0	6.5	-580-1 -104+0	437-4 335-2	465-1 250+0	6.5	-689-1 -130+0	-884-3 254-2	502-1 283+0
7.0	434-2 -986-1	230-2 120-2	-199-1 209+0	7.0	487-2 -114+0	162-2 106-2	-310-1 230+0	7.0	354-2 -142+0	798-3 606-3	-445-1 265+0
7.5	528-1 -903-1	258-2 -824-3	-770-1 158+0	7.5	592-1 -103+0	205-2 -680-3	-973-1 175+0	7.5	680-1 -127+0	147-2 -729-3	-126+0 205+0
8.0	862-1 -674-1	212-2 -204-2	-116+0 833-1	8.0	972-1 -754-1	176-2 -174-2	-142+0 979-1	8.0	115+0 -922-1	148-2 -156-2	-183+0 118+0
8.5	100+0 -350-1	122-2 -252-2	-133+0 121-1	8.5	114+0 -364-1	107-2 -214-2	-161+0 126-1	8.5	138+0 -424-1	108-2 -183-2	-208+0 184-1
9.0	963-1 155-3	166-3 -236-2	-126+0 -534-1	9.0	110+0 581-2	250-3 -201-2	-151+0 -667-1	9.0	130+0 117-1	492-3 -162-2	-195+0 -784-1
9.5	755-1 319-1	-819-3 -175-2	-996-1 -111+0	9.5	872-1 436-1	-569-3 -148-2	-116+0 -128+0	9.5	110+0 606-1	-162-3 -111-2	-150+0 -155+0
10.0	435-1 551-1	-162-2 -891-3	-577-1 -141+0	10.0	507-1 704-1	-124-2 -702-3	-641-1 -163+0	10.0	666-1 964-1	-756-3 -397-3	-813-1 -202+0

TABLE C1.2 SH-WAVES (θ = 0°), POISSON'S RATIO = 1/3, B/C = 2

DAMPING = 0%

A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	916+0 194-2	220-2 -249-3	149-2 -362+0
1.0	682+0 212-1	104-1 -386-2	146-1 -622+0
1.5	386+0 786-1	166-1 -192-1	438-1 -720+0
2.0	123+0 131+0	717-2 -364-1	903-1 -636+0
2.5	-615-1 138+0	-111-1 -384-1	154+0 -422+0
3.0	-163+0 996-1	-235-1 -263-1	205+0 -166+0
3.5	-184+0 337-1	-229-1 -892-2	208+0 570-1
4.0	-139+0 -328-1	-121-1 408-2	154+0 206+0
4.5	-603-1 -790-1	146-2 788-2	619-1 260+0
5.0	222-1 -929-1	110-1 443-2	-379-1 223+0
5.5	817-1 -733-1	137-1 -145-2	-113+0 121+0
6.0	104+0 -313-1	105-1 -592-2	-143+0 -129-2
6.5	874-1 162-1	424-2 -669-2	-123+0 -105+0
7.0	442-1 525-1	-152-2 -396-2	-641-1 -160+0
7.5	-791-2 663-1	-476-2 262-3	107-1 -155+0
8.0	-507-1 551-1	-515-2 381-2	743-1 -985-1
8.5	-706-1 255-1	-350-2 540-2	107+0 -155-1
9.0	-639-1 -101-1	-108-2 491-2	997-1 633-1
9.5	-356-1 -386-1	100-2 289-2	583-1 112+0
10.0	187-2 -510-1	212-2 450-3	991-4 117+0

DAMPING = 2%

A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	916+0 420-2	226-2 -164-3	-506-2 -362+0
1.0	684+0 321-1	986-2 -414-2	764-2 -623+0
1.5	389+0 960-1	155-1 -192-1	438-1 -721+0
2.0	126+0 150+0	614-2 -350-1	102+0 -641+0
2.5	-641-1 154+0	-106-1 -369-1	179+0 -430+0
3.0	-171+0 106+0	-218-1 -257-1	236+0 -171+0
3.5	-195+0 314-1	-209-1 -931-2	236+0 618-1
4.0	-150+0 -438-1	-109-1 192-2	172+0 221+0
4.5	-663-1 -953-1	148-2 554-2	629-1 281+0
5.0	237-1 -108+0	101-1 315-2	-537-1 244+0
5.5	907-1 -833-1	127-1 -147-2	-141+0 135+0
6.0	117+0 -317-1	100-1 -475-2	-175+0 -140-2
6.5	100+0 255-1	465-2 -502-2	-147+0 -120+0
7.0	519-1 682-1	-509-3 -266-2	-715-1 -184+0
7.5	-856-2 826-1	-362-2 796-3	222-1 -181+0
8.0	-595-1 663-1	-433-2 356-2	100+0 -116+0
8.5	-848-1 277-1	-331-2 470-2	139+0 -192-1
9.0	-782-1 -179-1	-151-2 413-2	126+0 762-1
9.5	-447-1 -538-1	171-3 240-2	700-1 137+0
10.0	173-2 -680-1	120-2 368-3	-765-2 145+0

DAMPING = 5%

A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	918+0 874-2	211-2 -203-3	-147-1 -361+0
1.0	690+0 493-1	910-2 -476-2	-306-2 -623+0
1.5	398+0 121+0	137-1 -190-1	419-1 -726+0
2.0	132+0 177+0	527-2 -332-1	120+0 -652+0
2.5	-667-1 177+0	-965-2 -348-1	215+0 -444+0
3.0	-183+0 120+0	-190-1 -250-1	282+0 -181+0
3.5	-214+0 298-1	-181-1 -114-1	281+0 668-1
4.0	-169+0 -601-1	-933-2 -102-2	202+0 243+0
4.5	-780-1 -121+0	146-2 271-2	692-1 317+0
5.0	247-1 -136+0	905-2 158-2	-758-1 282+0
5.5	105+0 -102+0	115-1 -135-2	-186+0 162+0
6.0	141+0 -358-1	968-2 -330-2	-228+0 287-2
6.5	124+0 381-1	531-2 -309-2	-191+0 -142+0
7.0	685-1 940-1	868-3 -101-2	-908-1 -228+0
7.5	-729-2 112+0	-225-2 162-2	354-1 -229+0
8.0	-745-1 904-1	-350-2 355-2	143+0 -154+0
8.5	-111+0 363-1	-332-2 412-2	197+0 -315-1
9.0	-107+0 -284-1	-225-2 335-2	180+0 959-1
9.5	-650-1 -805-1	-975-3 174-2	999-1 184+0
10.0	-167-2 -101+0	102-3 -127-4	-144-1 204+0

TABLE C1.3 SH-Waves (θ = 0°), Poisson's Ratio = 1/3, B/C = 3

	Damping = 0%				Damping = 2%				Damping = 5%		
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	879+0 246-2	378-2 -278-3	167-2 -400+0	0.5	378+0 638-2	371-2 -325-3	-508-2 -400+0	0.5	681+0 144-1	342-2 -682-3	-151-1 -399+0
1.0	561+0 357-1	155-1 -653-2	167-1 -640+0	1.0	564+0 500-1	150-1 -695-2	119-1 -640+0	1.0	570+0 717-1	140-1 -765-2	325-2 -643+0
1.5	210+0 102+0	209-1 -263-1	515-1 -635+0	1.5	214+0 121+0	194-1 -258-1	591-1 -639+0	1.5	222+0 149+0	177-1 -253-1	687-1 -647+0
2.0	-428-1 127+0	633-2 -396-1	113+0 -420+0	2.0	-443-1 142+0	609-2 -382-1	135+0 -427+0	2.0	-452-1 167+0	603-2 -362-1	168+0 -439+0
2.5	-169+0 855-1	-114-1 -315-1	169+0 -130+0	2.5	-177+0 918-1	-991-2 -304-1	198+0 -134+0	2.5	-189+0 103+0	-750-2 -289-1	241+0 -142+0
3.0	-174+0 102-1	-161-1 -892-2	163+0 108+0	3.0	-185+0 454-2	-133-1 -953-2	187+0 114+0	3.0	-203+0 -209-2	-989-2 -105-1	225+0 123+0
3.5	-960-1 -570-1	-441-2 104-1	898-1 230+0	3.5	-104+0 -726-1	-245-2 794-2	974-1 246+0	3.5	-119+0 -949-1	-373-3 514-2	113+0 272+0
4.0	806-2 -863-1	110-1 152-1	-151-1 219+0	4.0	770-2 -103+0	109-1 132-1	-264-1 233+0	4.0	551-2 -130+0	107-1 109-1	-410-1 271+0
4.5	842-1 -663-1	182-1 878-2	-983-1 109+0	4.5	926-1 -778-1	168-1 863-2	-125+0 121+0	4.5	106+0 -965-1	154-1 804-2	-165+0 144+0
5.0	104+0 -187-1	141-1 -209-3	-125+0 -297-1	5.0	117+0 -164-1	129-1 158-2	-154+0 -321-1	5.0	141+0 -161-1	116-1 399-2	-201+0 -331-1
5.5	694-1 334-1	285-2 -495-2	-893-1 -129+0	5.5	803-1 465-1	268-2 -223-2	-104+0 -145+0	5.5	101+0 665-1	253-2 104-2	-135+0 -175+0
6.0	636-2 619-1	-790-2 -326-2	-133-1 -151+0	6.0	867-2 791-1	-709-2 -122-2	-842-2 -174+0	6.0	150-1 109+0	-617-2 126-2	-480-2 -218+0
6.5	-497-1 551-1	-124-1 184-2	603-1 -967-1	6.5	-575-1 673-1	-114-1 213-2	838-1 -114+0	6.5	-709-1 918-1	-105-1 250-2	121+0 -150+0
7.0	-727-1 207-1	-992-2 570-2	958-1 -289-2	7.0	-866-1 216-1	-960-2 434-2	125+0 -464-2	7.0	-113+0 271-1	-967-2 262-2	179+0 -123-1
7.5	-558-1 -204-1	-333-2 555-2	789-1 791-1	7.5	-687-1 -317-1	-411-2 349-2	996-1 944-1	7.5	-955-1 -490-1	-537-2 111-2	143+0 122+0
8.0	-132-1 -468-1	268-2 175-2	240-1 111+0	8.0	-174-1 -640-1	133-2 237-3	245-1 136+0	8.0	-287-1 -959-1	-374-3 -173-2	328-1 187+0
8.5	306-1 -462-1	524-2 -287-2	-379-1 840-1	8.5	375-1 -603-1	410-2 -319-2	-581-1 105+0	8.5	493-1 -904-1	300-2 -399-2	-911-1 152+0
9.0	541-1 -217-1	416-2 -545-2	-747-1 168-1	9.0	631-1 -250-1	387-2 -470-2	-105+0 227-1	9.0	978-1 -366-1	405-2 -434-2	-164+0 404-1
9.5	468-1 119-1	105-2 -477-2	-701-1 -517-1	9.5	608-1 210-1	179-2 -368-2	-945-1 -645-1	9.5	928-1 352-1	315-2 -267-2	-148+0 -886-1
10.0	163-1 359-1	-178-2 -175-2	-297-1 -868-1	10.0	224-1 528-1	-455-3 -100-2	-351-1 -112+0	10.0	389-1 863-1	136-2 243-4	-550-1 -167+0

TABLE C1.4 SH-WAVES ($\theta = 0°$), POISSON'S RATIO = 1/3, B/C = 4

DAMPING = 0%				DAMPING = 2%				DAMPING = 5%			
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	843+0 335-2	530-2 -308-3	158-2 -415+0	0.5	843+0 928-2	507-2 -590-3	-512-2 -414+0	0.5	844+0 181-1	506-2 -961-3	-155-1 -414+0
1.0	456+0 488-1	194-1 -890-2	165-1 -611+0	1.0	459+0 659-1	186-1 -948-2	133-1 -616+0	1.0	467+0 901-1	174-1 -997-2	986-2 -617+0
1.5	831-1 111+0	214-1 -296-1	578-1 -512+0	1.5	851-1 130+0	205-1 -289-1	711-1 -517+0	1.5	895-1 157+0	190-1 -278-1	906-1 -526+0
2.0	-134+0 100+0	369-2 -349-1	124+0 -224+0	2.0	-140+0 110+0	421-2 -333-1	149+0 -230+0	2.0	-147+0 128+0	549-2 -315-1	186+0 -240+0
2.5	-182+0 271-1	-117-1 -152-1	143+0 542-1	2.5	-192+0 241-1	-923-2 -150-1	167+0 573-1	2.5	-209+0 214-1	-523-2 -144-1	204+0 600-1
3.0	-103+0 -493-1	-777-2 113-1	829-1 205+0	3.0	-111+0 -639-1	-540-2 990-2	913-1 218+0	3.0	-125+0 -852-1	-200-2 764-2	107+0 240+0
3.5	167-1 -810-1	760-2 221-1	-187-1 193+0	3.5	171-1 -972-1	788-2 203-1	-300-1 203+0	3.5	164-1 -124+0	809-2 182-1	-462-1 238+0
4.0	950-1 -552-1	160-1 142-1	-941-1 672-1	4.0	104+0 -621-1	144-1 143-1	-119+0 754-1	4.0	121+0 -764-1	121-1 148-1	-160+0 920-1
4.5	957-1 312-2	975-2 -152-3	-101+0 -715-1	4.5	108+0 102-1	768-2 229-2	-124+0 -791-1	4.5	131+0 193-1	514-2 553-2	-163+0 -899-1
5.0	345-1 508-1	-506-2 -798-2	-436-1 -138+0	5.0	411-1 673-1	-578-2 -504-2	-472-1 -158+0	5.0	546-1 943-1	-662-2 -143-2	-587-1 -192+0
5.5	-373-1 576-1	-154-1 -571-2	355-1 -106+0	5.5	-422-1 722-1	-147-1 -474-2	531-1 -124+0	5.5	-500-1 999-1	-142-1 -364-2	795-1 -161+0
6.0	-729-1 252-1	-145-1 709-3	823-1 -127-1	6.0	-858-1 274-1	-134-1 -852-3	109+0 -167-1	6.0	-111+0 355-1	-127-1 -296-2	157+0 -279-1
6.5	-550-1 -208-1	-435-2 417-2	694-1 742-1	6.5	-672-1 -324-1	-422-2 110-2	874-1 881-1	6.5	-931-1 -503-1	-458-2 -279-2	125+0 115+0
7.0	-362-2 -474-1	632-2 187-2	116-1 100+0	7.0	-593-2 -649-1	543-2 -418-3	830-2 123+0	7.0	-130-1 -979-1	452-2 -342-2	859-2 169+0
7.5	429-1 -392-1	103-1 -285-2	-477-1 575-1	7.5	525-1 -503-1	954-2 -293-2	-706-1 730-1	7.5	714-1 -757-1	936-2 -341-2	-111+0 108+0
8.0	548-1 -512-2	668-2 -509-2	-691-1 -180-1	8.0	698-1 -198-2	697-2 -329-2	-958-1 -209-1	8.0	102+0 -567-3	820-2 -127-2	-150+0 -231-1
8.5	285-1 289-1	-301-3 -289-2	-420-1 -726-1	8.5	383-1 443-1	102-2 -648-3	-540-1 -927-1	8.5	618-1 727-1	303-2 222-2	-852-1 -134+0
9.0	-138-1 400-1	-518-2 191-2	108-1 -727-1	9.0	-167-1 569-1	-330-2 306-2	225-1 -959-1	9.0	-205-1 936-1	-237-2 500-2	392-1 -150+0
9.5	-423-1 226-1	-536-2 535-2	514-1 -243-1	9.5	-559-1 288-1	-501-2 481-2	790-1 -341-1	9.5	-865-1 477-1	-538-2 506-2	134+0 -615-1
10.0	-392-1 -887-2	-208-2 478-2	540-1 357-1	10.0	-542-1 -176-1	-313-2 339-2	778-1 466-1	10.0	-906-1 -314-1	-516-2 224-2	134+0 681-1

TABLE C2.1 SH-WAVES ($\theta = 0°$), POISSON'S RATIO = 0.45, B/C = 1

	DAMPING = 0%				DAMPING = 2%				DAMPING = 5%		
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	956+0 281-3	400-3 -349-4	163-4 -244+0	0.5	957+0 136-2	288-3 -172-5	-464-2 -243+0	0.5	957+0 516-2	289-3 -941-4	-116-1 -243+0
1.0	830+0 743-2	194-2 -887-3	113-3 -454+0	1.0	830+0 136-1	184-2 -100-2	-715-2 -454+0	1.0	833+0 234-1	155-2 -126-2	-181-1 -454+0
1.5	639+0 367-1	377-2 -610-2	765-3 -601+0	1.5	642+0 481-1	329-2 -609-2	-489-2 -601+0	1.5	648+0 661-1	261-2 -589-2	-141-1 -602+0
2.0	431+0 856-1	223-3 -149-1	107-1 -663+0	2.0	435+0 101+0	-516-3 -142-1	987-2 -665+0	2.0	444+0 125+0	-116-2 -133-1	653-2 -666+0
2.5	237+0 133+0	-950-2 -208-1	360-1 -635+0	2.5	242+0 150+0	-981-2 -197-1	421-1 -639+0	2.5	250+0 177+0	-996-2 -181-1	511-1 -648+0
3.0	762-1 160+0	-205-1 -206-1	815-1 -538+0	3.0	781-1 177+0	-202-1 -195-1	953-1 -545+0	3.0	823-1 203+0	-194-1 -179-1	116+0 -558+0
3.5	-475-1 158+0	-283-1 -152-1	135+0 -398+0	3.5	-500-1 174+0	-277-1 -143-1	155+0 -406+0	3.5	-518-1 197+0	-261-1 -137-1	186+0 -422+0
4.0	-131+0 132+0	-309-1 -729-2	180+0 -242+0	4.0	-137+0 142+0	-297-1 -752-2	205+0 -249+0	4.0	-147+0 160+0	-284-1 -770-2	244+0 -261+0
4.5	-175+0 880-1	-277-1 -312-3	203+0 -898-1	4.5	-184+0 925-1	-268-1 -130-2	230+0 -927-1	4.5	-200+0 101+0	-256-1 -277-2	271+0 -981-1
5.0	-181+0 348-1	-203-1 339-2	198+0 434-1	5.0	-192+0 329-1	-201-1 189-2	223+0 469-1	5.0	-212+0 315-1	-200-1 -307-3	263+0 516-1
5.5	-155+0 -172-1	-121-1 351-2	165+0 145+0	5.5	-167+0 -254-1	-125-1 179-2	185+0 155+0	5.5	-187+0 -373-1	-133-1 -564-3	217+0 171+0
6.0	-108+0 -602-1	-475-2 918-3	112+0 207+0	6.0	-118+0 -735-1	-564-2 -596-3	123+0 223+0	6.0	-134+0 -935-1	-683-2 -267-2	143+0 251+0
6.5	-511-1 -884-1	528-3 -272-2	474-1 228+0	6.5	-563-1 -104+0	-552-3 -382-2	479-1 246+0	6.5	-666-1 -129+0	-163-2 -549-2	513-1 280+0
7.0	671-2 -978-1	361-2 -616-2	-185-1 208+0	7.0	659-2 -113+0	268-2 -681-2	-283-1 226+0	7.0	537-2 -140+0	169-2 -784-2	-425-1 263+0
7.5	552-1 -893-1	473-2 -826-2	-751-1 157+0	7.5	605-1 -102+0	423-2 -864-2	-935-1 173+0	7.5	696-1 -126+0	382-2 -920-2	-124+0 204+0
8.0	884-1 -664-1	457-2 -894-2	-114+0 871-1	8.0	982-1 -744-1	455-2 -902-2	-138+0 971-1	8.0	115+0 -906-1	489-2 -915-2	-180+0 117+0
8.5	102+0 -340-1	379-2 -809-2	-130+0 104-1	8.5	114+0 -356-1	430-2 -799-2	-157+0 122-1	8.5	138+0 -413-1	515-2 -791-2	-203+0 183-1
9.0	971-1 113-2	280-2 -616-2	-123+0 -591-1	9.0	110+0 633-2	369-2 -598-2	-147+0 -664-1	9.0	135+0 125-1	496-2 -577-2	-191+0 -772-1
9.5	755-1 326-1	196-2 -359-2	-966-1 -112+0	9.5	870-1 438-1	304-2 -344-2	-113+0 -126+0	9.5	110+0 612-1	452-2 -323-2	-146+0 -153+0
10.0	432-1 556-1	141-2 -110-2	-551-1 -140+0	10.0	506-1 706-1	244-2 -974-3	-620-1 -160+0	10.0	662-1 964-1	385-2 -662-3	-790-1 -200+0

TABLE C2.2 SH-WAVES ($\theta = 0°$), POISSON'S RATIO = 0.45, B/C = 2

DAMPING = 0%

A_0	U_2^*/S		$L\Phi_1^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	918+0	314-3	936-3	-110-4	142-2	-366+0
1.0	686+0	209-1	506-2	-294-2	144-1	-629+0
1.5	391+0	774-1	811-2	-156-1	429-1	-729+0
2.0	130+0	129+0	-854-3	-313-1	905-1	-648+0
2.5	-548-1	136+0	-167-1	-360-1	154+0	-433+0
3.0	-157+0	964-1	-269-1	-281-1	207+0	-177+0
3.5	-178+0	319-1	-249-1	-143-1	212+0	492-1
4.0	-137+0	-331-1	-122-1	-339-2	159+0	201+0
4.5	-584-1	-776-1	423-2	686-3	667-1	258+0
5.0	237-1	-899-1	165-1	-106-2	-333-1	223+0
5.5	831-1	-699-1	209-1	-466-2	-109+0	123+0
6.0	104+0	-284-1	173-1	-630-2	-139+0	144-2
6.5	870-1	178-1	934-2	-435-2	-120+0	-103+0
7.0	432-1	532-1	741-3	489-3	-617-1	-157+0
7.5	-934-2	657-1	-534-2	568-2	114-1	-152+0
8.0	-519-1	541-1	-785-2	890-2	741-1	-970-1
8.5	-715-1	245-1	-715-2	877-2	105+0	-140-1
9.0	-642-1	-110-1	-475-2	557-2	971-1	643-1
9.5	-352-1	-391-1	-186-2	923-3	560-1	113+0
10.0	296-2	-510-1	385-3	-351-2	-135-2	117+0

DAMPING = 2%

A_0	U_2^*/S		$L\Phi_1^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	917+0	460-2	749-3	-132-3	-511-2	-365+0
1.0	688+0	322-1	487-2	-322-2	696-2	-630+0
1.5	395+0	941-1	704-2	-153-1	433-1	-732+0
2.0	134+0	147+0	-181-2	-298-1	102+0	-653+0
2.5	-565-1	150+0	-166-1	-347-1	179+0	-442+0
3.0	-164+0	103+0	-256-1	-278-1	238+0	-182+0
3.5	-189+0	300-1	-233-1	-157-1	240+0	526-1
4.0	-146+0	-431-1	-110-1	-575-2	177+0	214+0
4.5	-641-1	-935-1	445-2	-190-2	686-1	277+0
5.0	247-1	-105+0	159-1	-275-2	-480-1	244+0
5.5	905-1	-797-1	203-1	-491-2	-136+0	137+0
6.0	116+0	-290-1	176-1	-502-2	-170+0	269-2
6.5	995-1	267-1	105-1	-227-2	-143+0	-115+0
7.0	508-1	680-1	241-2	250-2	-699-1	-179+0
7.5	-961-2	820-1	-394-2	725-2	214-1	-176+0
8.0	-603-1	654-1	-746-2	945-2	993-1	-114+0
8.5	-851-1	269-1	-796-2	850-2	136+0	-184-1
9.0	-778-1	-184-1	-648-2	480-2	123+0	755-1
9.5	-441-1	-539-1	-385-2	-262-4	678-1	135+0
10.0	234-2	-678-1	-124-2	-437-2	-851-2	144+0

DAMPING = 5%

A_0	U_2^*/S		$L\Phi_1^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	919+0	781-2	737-3	-858-4	-149-1	-364+0
1.0	692+0	478-1	430-2	-340-2	-429-2	-631+0
1.5	403+0	119+0	582-2	-150-1	408-1	-736+0
2.0	140+0	174+0	-290-2	-282-1	120+0	-663+0
2.5	-590-1	174+0	-161-1	-327-1	215+0	-456+0
3.0	-176+0	117+0	-240-1	-273-1	284+0	-192+0
3.5	-207+0	291-1	-212-1	-175-1	285+0	572-1
4.0	-164+0	-585-1	-971-2	-925-2	208+0	236+0
4.5	-753-1	-118+0	446-2	-605-2	759-1	313+0
5.0	258-1	-131+0	155-1	-536-2	-680-1	280+0
5.5	104+0	-981-1	202-1	-513-2	-178+0	163+0
6.0	139+0	-328-1	187-1	-335-2	-221+0	770-2
6.5	123+0	398-1	124-1	746-3	-186+0	-135+0
7.0	666-1	939-1	471-2	575-2	-892-1	-222+0
7.5	-861-2	111+0	-244-2	966-2	347-1	-225+0
8.0	-752-1	886-1	-728-2	106-1	141+0	-152+0
8.5	-111+0	349-1	-944-2	858-2	194+0	-305-1
9.0	-106+0	-292-1	-913-2	401-2	177+0	959-1
9.5	-640-1	-807-1	-698-2	-148-2	972-1	182+0
10.0	-701-3	-101+0	-345-2	-609-2	-152-1	201+0

TABLE C2.3 SH-WAVES (θ = 0°), POISSON'S RATIO = 0.45, B/C = 3

	DAMPING = 0%				DAMPING = 2%				DAMPING = 5%		
A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$	A_0	U_2^*/S	$L\Phi_1^*/S$	$L\Phi_3^*/S$
0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0	0.0	100+1 000+0	000+0 000+0	000+0 000+0
0.5	881+0 200-2	134-2 -145-3	166-2 -404+0	0.5	881+0 561-2	121-2 -126-3	-531-2 -404+0	0.5	865+0 127-1	110-2 -230-3	-154-1 -404+0
1.0	566+0 349-1	760-2 -497-2	160-1 -645+0	1.0	568+0 490-1	710-2 -522-2	108-1 -646+0	1.0	575+0 700-1	631-2 -552-2	241-2 -651+0
1.5	218+0 100+0	945-2 -216-1	501-1 -644+0	1.5	222+0 119+0	833-2 -211-1	578-1 -648+0	1.5	229+0 147+0	690-2 -206-1	683-1 -656+0
2.0	-348-1 125+0	-255-2 -354-1	114+0 -429+0	2.0	-352-1 140+0	-310-2 -341-1	136+0 -437+0	2.0	-363-1 164+0	-343-2 -325-1	166+0 -450+0
2.5	-162+0 834-1	-162-1 -317-1	172+0 -139+0	2.5	-163+0 901-1	-150-1 -309-1	200+0 -144+0	2.5	-180+0 102+0	-134-1 -301-1	244+0 -152+0
3.0	-170+0 945-2	-169-1 -141-1	168+0 101+0	3.0	-180+0 416-2	-145-1 -152-1	191+0 105+0	3.0	-197+0 -149-2	-117-1 -167-1	229+0 114+0
3.5	-938-1 -554-1	-230-2 342-2	939-1 225+0	3.5	-101+0 -697-1	-651-3 681-3	102+0 240+0	3.5	-115+0 -919-1	155-2 -319-2	119+0 265+0
4.0	860-2 -831-1	158-1 967-2	-103-1 217+0	4.0	795-2 -987-1	160-1 752-2	-204-1 235+0	4.0	616-2 -125+0	167-1 434-2	-344-1 208+0
4.5	841-1 -646-1	241-1 702-2	-950-1 110+0	4.5	919-1 -743-1	237-1 682-2	-119+0 122+0	4.5	104+0 -922-1	232-1 653-2	-159+0 146+0
5.0	104+0 -160-1	193-1 175-2	-122+0 -268-1	5.0	115+0 -141-1	183-1 372-2	-149+0 -278-1	5.0	139+0 -135-1	186-1 684-2	-196+0 -284-1
5.5	685-1 343-1	499-2 -609-3	-865-1 -126+0	5.5	785-1 465-1	509-2 258-2	-102+0 -141+0	5.5	991-1 666-1	575-2 744-2	-132+0 -169+0
6.0	518-2 608-1	-958-2 125-2	-120-1 -148+0	6.0	782-2 777-1	-873-2 423-2	-813-2 -170+0	6.0	134-1 107+0	-816-2 839-2	-528-2 -213+0
6.5	-506-1 534-1	-170-1 477-2	600-1 -950-1	6.5	-576-1 651-1	-164-1 539-2	818-1 -112+0	6.5	-714-1 894-1	-168-1 703-2	118+0 -147+0
7.0	-727-1 190-1	-147-1 551-2	941-1 -224-2	7.0	-862-1 198-1	-155-1 417-2	122+0 -435-2	7.0	-112+0 250-1	-177-1 261-2	175+0 -123-1
7.5	-554-1 -215-1	-654-2 237-2	768-1 789-1	7.5	-674-1 -322-1	-822-2 -344-3	972-1 927-1	7.5	-935-1 -496-1	-112-1 -416-2	139+0 119+0
8.0	-119-1 -466-1	278-2 -323-2	223-1 110+0	8.0	-163-1 -635-1	847-3 -602-2	232-1 133+0	8.0	-268-1 -955-1	-158-2 -103-1	314-1 183+0
8.5	320-1 -451-1	825-2 -776-2	-381-1 825-1	8.5	383-1 -591-1	748-2 -914-2	-573-1 103+0	8.5	503-1 -887-1	718-2 -120-1	-901-1 149+0
9.0	548-1 -204-1	862-2 -831-2	-735-1 158-1	9.0	683-1 -237-1	951-2 -803-2	-103+0 220-1	9.0	979-1 -347-1	120-1 -869-2	-161+0 388-1
9.5	467-1 128-1	504-2 -439-2	-681-1 -522-1	9.5	605-1 217-1	738-2 -294-2	-920-1 -642-1	9.5	919-1 363-1	114-1 -132-2	-145+0 -885-1
10.0	153-1 364-1	429-3 161-2	-276-1 -867-1	10.0	217-1 530-1	287-2 343-2	-332-1 -111+0	10.0	377-1 866-1	686-2 654-2	-524-1 -165+0

TABLE C2.4 SH-WAVES (θ = 0°), POISSON'S RATIO = 0.45, B/C = 4

DAMPING = 0%

A_0	U_2^*/S		$L\Phi_1^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	846+0	326-2	187-2	-230-3	147-2	-418+0
1.0	462+0	484-1	949-2	-698-2	150-1	-619+0
1.5	913-1	110+0	933-2	-248-1	574-1	-520+0
2.0	-127+0	990-1	-439-2	-326-1	126+0	-233+0
2.5	-177+0	260-1	-135-1	-188-1	148+0	462-1
3.0	-101+0	-479-1	-500-2	426-2	870-1	199+0
3.5	166-1	-778-1	127-1	165-1	-150-1	190+0
4.0	945-1	-517-1	214-1	131-1	-912-1	690-1
4.5	945-1	459-2	128-1	293-2	-986-1	-685-1
5.0	338-1	503-1	-562-2	-334-2	-417-1	-135+0
5.5	-377-1	560-1	-190-1	-314-2	356-1	-104+0
6.0	-724-1	233-1	-186-1	-245-3	809-1	-124-1
6.5	-539-1	-214-1	-611-2	280-3	672-1	733-1
7.0	-230-2	-469-1	832-2	-279-2	105-1	992-1
7.5	436-1	-375-1	149-1	-548-2	-473-1	564-1
8.0	548-1	-360-2	112-1	-438-2	-675-1	-185-1
8.5	276-1	295-1	142-2	856-3	-401-1	-721-1
9.0	-150-1	394-1	-707-2	640-2	120-1	-715-1
9.5	-427-1	213-1	-940-2	783-2	512-1	-227-1
10.0	-389-1	-989-2	-576-2	384-2	523-1	364-1

DAMPING = 2%

A_0	U_2^*/S		$L\Phi_1^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	848+0	831-2	155-2	-234-3	-527-2	-418+0
1.0	465+0	648-1	875-2	-720-2	126-1	-620+0
1.5	935-1	128+0	814-2	-241-1	710-1	-525+0
2.0	-131+0	109+0	-418-2	-314-1	150+0	-239+0
2.5	-185+0	239-1	-115-1	-187-1	171+0	481-1
3.0	-108+0	-618-1	-271-2	226-2	956-1	210+0
3.5	168-1	-939-1	136-1	144-1	-250-1	206+0
4.0	102+0	-585-1	201-1	133-1	-115+0	779-1
4.5	106+0	113-1	112-1	596-2	-120+0	-741-1
5.0	399-1	653-1	-624-2	703-4	-463-1	-153+0
5.5	-417-1	698-1	-188-1	-168-2	522-1	-122+0
6.0	-846-1	257-1	-186-1	-198-2	106+0	-168-1
6.5	-656-1	-325-1	-638-2	-367-2	850-1	863-1
7.0	-493-2	-638-1	737-2	-612-2	798-2	120+0
7.5	526-1	-483-1	149-1	-592-2	-692-1	715-1
8.0	692-1	-564-3	128-1	-218-2	-935-1	-208-1
8.5	372-1	445-1	374-2	433-2	-519-1	-909-1
9.0	-175-1	559-1	-580-2	891-2	230-1	-937-1
9.5	-562-1	277-1	-105-1	814-2	777-1	-328-1
10.0	-536-1	-183-1	-855-2	200-2	756-1	466-1

DAMPING = 5%

A_0	U_2^*/S		$L\Phi_1^*/S$		$L\Phi_3^*/S$	
0.0	100+1	000+0	000+0	000+0	000+0	000+0
0.5	846+0	176-1	193-2	-450-3	-155-1	-417+0
1.0	472+0	888-1	796-2	-747-2	100-1	-621+0
1.5	983-1	156+0	681-2	-232-1	901-1	-534+0
2.0	-138+0	127+0	-373-2	-299-1	188+0	-250+0
2.5	-202+0	220-1	-876-2	-193-1	209+0	512-1
3.0	-123+0	-825-1	240-3	-667-3	113+0	233+0
3.5	159-1	-120+0	144-1	117-1	-405-1	235+0
4.0	118+0	-725-1	193-1	136-1	-155+0	941-1
4.5	129+0	203-1	100-1	102-1	-159+0	-848-1
5.0	530-1	927-1	-703-2	532-2	-577-1	-186+0
5.5	-494-1	966-1	-195-1	650-3	776-1	-158+0
6.0	-109+0	333-1	-198-1	-433-2	154+0	-279-1
6.5	-907-1	-506-1	-848-2	-923-2	122+0	110+0
7.0	-113-1	-965-1	675-2	-113-1	786-2	166+0
7.5	715-1	-729-1	168-1	-813-2	-108+0	106+0
8.0	101+0	118-2	167-1	393-3	-147+0	-234-1
8.5	600-1	730-1	761-2	969-2	-821-1	-132+0
9.0	-220-1	923-1	-489-2	140-1	399-1	-147+0
9.5	-866-1	459-1	-136-1	101-1	132+0	-590-1
10.0	-897-1	-327-1	-145-1	-471-4	131+0	685-1

D. TABLES OF FOUNDATION INPUT MOTIONS FOR RAYLEIGH WAVES (UNDAMPED CASE).

(1) The tables are organized on the basis of two integers I and J. (TABLE D. I. J):
I = 1, 2 correspond to $\nu = 0.33, \ 0.45$
J = 1, 2, 3, 4 correspond to B/C = 1, 2, 3, 4.

(2) The notation 637 + 0 372 - 1 denotes the complex number 0.637 + i 0.0372.

TABLE D1.1 Poisson's Ratio = 0.33, B/C = 1

A_0	Rayleigh Waves ($\theta = 0°$) U_1^*/R_H		U_3^*/R_H		$L\Phi_2^*/R_H$	
0.0	100+1	000+0	000+0	-156+1	000+0	000+0
0.5	947+0	153-2	136-1	-143+1	804+0	279-3
1.0	799+0	858-2	796-1	-118+1	145+1	723-2
1.5	580+0	363-1	182+0	-879+0	182+1	535-1
2.0	349+0	843-1	281+0	-575+0	190+1	189+0
2.5	146+0	122+0	340+0	-301+0	174+1	398+0
3.0	-108-1	130+0	340+0	-767-1	140+1	629+0
3.5	-118+0	104+0	290+0	882-1	971+0	817+0
4.0	-176+0	515-1	200+0	191+0	507+0	911+0
4.5	-191+0	-138-1	915-1	235+0	720-1	883+0
5.0	-170+0	-761-1	-130-1	224+0	-282+0	738+0
5.5	-120+0	-121+0	-964-1	172+0	-523+0	506+0
6.0	-570-1	-142+0	-147+0	951-1	-631+0	230+0
6.5	830-2	-137+0	-160+0	102-1	-609+0	-398-1
7.0	633-1	-109+0	-139+0	-650-1	-480+0	-260+0
7.5	988-1	-652-1	-923-1	-118+0	-280+0	-398+0
8.0	111+0	-150-1	-315-1	-142+0	-529-1	-441+0
8.5	100+0	317-1	293-1	-136+0	156+0	-389+0
9.0	711-1	664-1	781-1	-104+0	311+0	-262+0
9.5	306-1	840-1	106+0	-554-1	389+0	-934-1
10.0	-118-1	820-1	111+0	-114-2	381+0	803-1

A_0	Rayleigh Waves ($\theta = 90°$) U_2^*/R_H		U_3^*/R_H		$L\Phi_1^*/R_H$	
0.0	100+1	000+0	000+0	-156+1	000+0	000+0
0.5	947+0	153-2	136-1	-143+1	-804+0	-279-3
1.0	799+0	858-2	796-1	-118+1	-145+1	-723-2
1.5	580+0	363-1	182+0	-879+0	-182+1	-535-1
2.0	349+0	843-1	281+0	-575+0	-190+1	-189+0
2.5	146+0	122+0	340+0	-301+0	-174+1	-398+0
3.0	-108-1	130+0	340+0	-767-1	-140+1	-629+0
3.5	-118+0	104+0	290+0	882-1	-971+0	-817+0
4.0	-176+0	515-1	200+0	191+0	-507+0	-911+0
4.5	-191+0	-138-1	919-1	235+0	-720-1	-883+0
5.0	-170+0	-761-1	-129-1	224+0	282+0	-738+0
5.5	-120+0	-121+0	-964-1	172+0	524+0	-505+0
6.0	-571-1	-142+0	-147+0	951-1	631+0	-230+0
6.5	830-2	-137+0	-160+0	104-1	609+0	397-1
7.0	633-1	-109+0	-139+0	-650-1	480+0	260+0
7.5	988-1	-652-1	-923-1	-118+0	279+0	399+0
8.0	111+0	-150-1	-315-1	-142+0	529-1	441+0
8.5	100+0	316-1	293-1	-136+0	-156+0	389+0
9.0	711-1	664-1	781-1	-104+0	-311+0	262+0
9.5	306-1	836-1	106+0	-554-1	-389+0	934-1
10.0	-117-1	820-1	111+0	-119-2	-381+0	-803-1

TABLE D1.2 Poisson's Ratio = 0.33, B/C = 2

	Rayleigh Waves (θ = 0°)				Rayleigh Waves (θ = 90°)		
A_0	U_1^*/R_H	U_3^*/R_H	$L\Phi_2^*/R_H$	A_0	U_2^*/R_H	U_3^*/R_H	$L\Phi_1^*/R_H$
0.0	100+1 000+0	000+0 -156+1	000+0 000+0	0.0	100+1 000+0	000+0 -156+1	000+0 000+0
0.5	899+0 740-3	219-1 -136+1	780+0 527-3	0.5	975+0 709-3	994-2 -148+1	-818+0 -203-3
1.0	628+0 212-1	118+0 -940+0	127+1 207-1	1.0	897+0 272-2	512-1 -134+1	-155+1 -274-2
1.5	296+0 763-1	242+0 -481+0	134+1 121+0	1.5	775+0 135-1	113+0 -115+1	-213+1 -231-1
2.0	304-1 119+0	301+0 -106+0	106+1 320+0	2.0	624+0 352-1	188+0 -956+0	-253+1 -763-1
2.5	-129+0 996-1	255+0 142+0	612+0 509+0	2.5	462+0 690-1	258+0 -743+0	-271+1 -195+0
3.0	-186+0 266-1	134+0 254+0	135+0 578+0	3.0	307+0 102+0	318+0 -545+0	-272+1 -367+0
3.5	-161+0 -577-1	-723-2 244+0	-245+0 483+0	3.5	166+0 127+0	351+0 -357+0	-257+1 -592+0
4.0	-841-1 -116+0	-116+0 152+0	-452+0 263+0	4.0	485-1 137+0	358+0 -192+0	-229+1 -830+0
4.5	795-2 -127+0	-158+0 270-1	-464+0 680-3	4.5	-474-1 130+0	336+0 -516-1	-192+1 -104+1
5.0	816-1 -927-1	-131+0 -813-1	-318+0 -212+0	5.0	-119+0 105+0	291+0 615-1	-149+1 -122+1
5.5	113+0 -292-1	-560-1 -138+0	-908-1 -308+0	5.5	-168+0 685-1	228+0 145+0	-104+1 -133+1
6.0	936-1 355-1	300-1 -134+0	125+0 -271+0	6.0	-195+0 233-1	155+0 200+0	-585+0 -134+1
6.5	493-1 772-1	924-1 -785-1	258+0 -133+0	6.5	-201+0 -242-1	781-1 225+0	-162+0 -128+1
7.0	-111-1 825-1	110+0 -148-2	272+0 409-1	7.0	-189+0 -687-1	465-2 224+0	208+0 -114+1
7.5	-589-1 539-1	818-1 647-1	178+0 180+0	7.5	-161+0 -106+0	-596-1 200+0	507+0 -937+0
8.0	-770-1 658-2	243-1 960-1	258-1 233+0	8.0	-122+0 -133+0	-110+0 160+0	719+0 -682+0
8.5	-624-1 -390-1	-362-1 846-1	-118+0 191+0	8.5	-768-1 -147+0	-144+0 107+0	841+0 -406+0
9.0	-243-1 -652-1	-756-1 399-1	-201+0 788-1	9.0	-292-1 -149+0	-160+0 502-1	872+0 -129+0
9.5	197-1 -635-1	-799-1 -164-1	-195+0 -525-1	9.5	161-1 -137+0	-158+0 -634-2	819+0 125+0
10.0	516-1 -370-1	-510-1 -608-1	-113+0 -149+0	10.0	552-1 -116+0	-141+0 -570-1	697+0 339+0

TABLE D1.3 Poisson's Ratio = 0.33, B/C = 3

Rayleigh Waves ($\theta = 0°$)

A_0	U_1^*/R_H	U_3^*/R_H	$L\Phi_2^*/R_H$
0.0	100+1 000+0	000+0 -156+1	000+0 000+0
0.5	855+0 345-2	283-1 -129+1	757+0 977-3
1.0	488+0 336-1	144+0 -745+0	112+1 317-1
1.5	111+0 955-1	252+0 -216+0	990+0 166+0
2.0	-120+0 980-1	234+0 133+0	547+0 350+0
2.5	-189+0 220-1	102+0 270+0	573-1 420+0
3.0	-139+0 -701-1	-533-1 225+0	-292+0 308+0
3.5	-285-1 -116+0	-146+0 797-1	-408+0 773-1
4.0	715-1 -933-1	-140+0 -689-1	-297+0 -147+0
4.5	113+0 -241-1	-563-1 -145+0	-663-1 -252+0
5.0	871-1 482-1	452-1 -128+0	147+0 -203+0
5.5	176-1 819-1	104+0 -444-1	239+0 -485-1
6.0	-501-1 641-1	952-1 481-1	184+0 111+0
6.5	-795-1 110-1	319-1 966-1	364-1 187+0
7.0	-592-1 -430-1	-405-1 817-1	-109+0 147+0
7.5	-776-2 -667-1	-793-1 210-1	-172+0 289-1
8.0	418-1 -498-1	-659-1 -442-1	-128+0 -905-1
8.5	613-1 -614-2	-144-1 -757-1	-163-1 -142+0
9.0	430-1 361-1	403-1 -588-1	915-1 -104+0
9.5	164-2 521-1	658-1 -904-2	133+0 -738-2
10.0	-363-1 355-1	496-1 408-1	914-1 851-1

Rayleigh Waves ($\theta = 90°$)

A_0	U_2^*/R_H	U_3^*/R_H	$L\Phi_1^*/R_H$
0.0	100+1 000+0	000+0 -156+1	000+0 000+0
0.5	983+0 -122-2	716-2 -150+1	-825+0 177-3
1.0	929+0 174-2	387-1 -139+1	-158+1 -138-2
1.5	845+0 564-2	837-1 -126+1	-224+1 -108-1
2.0	735+0 197-1	138+0 -110+1	-276+1 -444-1
2.5	609+0 420-1	202+0 -939+0	-312+1 -112+0
3.0	478+0 696-1	262+0 -772+0	-330+1 -241+0
3.5	351+0 985-1	311+0 -609+0	-334+1 -414+0
4.0	230+0 121+0	345+0 -451+0	-325+1 -623+0
4.5	123+0 136+0	360+0 -306+0	-304+1 -855+0
5.0	314-1 140+0	357+0 -175+0	-275+1 -109+1
5.5	-458-1 131+0	339+0 -609-1	-238+1 -130+1
6.0	-107+0 112+0	301+0 350-1	-196+1 -149+1
6.5	-153+0 838-1	254+0 112+0	-151+1 -161+1
7.0	-184+0 488-1	196+0 168+0	-105+1 -167+1
7.5	-201+0 102-1	134+0 205+0	-609+0 -165+1
8.0	-203+0 -285-1	717-1 222+0	-191+0 -157+1
8.5	-193+0 -649-1	111-1 224+0	181+0 -143+1
9.0	-173+0 -972-1	-433-1 207+0	499+0 -123+1
9.5	-145+0 -123+0	-897-1 180+0	749+0 -993+0
10.0	-110+0 -140+0	-125+0 143+0	927+0 -723+0

TABLE D1.4 POISSON'S RATIO = 0.33, B/C = 4

	Rayleigh Waves ($\theta = 0°$)				Rayleigh Waves ($\theta = 90°$)		
A_0	U_1^*/R_H	U_3^*/R_H	$-L\Phi_2^*/R_H$	A_0	U_2^*/R_H	U_3^*/R_H	$L\Phi_1^*/R_H$
0.0	100+1 000+0	000+0 -156+1	000+0 000+0	0.0	100+1 000+0	000+0 -156+1	000+0 000+0
0.5	813+0 324-2	336-1 -123+1	734+0 146-2	0.5	986+0 724-3	685-2 -151+1	-827+0 -240-3
1.0	372+0 460-1	163+0 -581+0	989+0 457-1	1.0	947+0 348-3	298-1 -142+1	-160+1 -463-3
1.5	-146-1 967-1	235+0 -297-1	711+0 194+0	1.5	884+0 354-2	680-1 -132+1	-231+1 -536-2
2.0	-182+0 543-1	145+0 246+0	207+0 324+0	2.0	800+0 118-1	115+0 -119+1	-290+1 -237-1
2.5	-159+0 -443-1	-233-1 248+0	-206+0 274+0	2.5	698+0 270-1	165+0 -106+1	-335+1 -754-1
3.0	-360-1 -104+0	-139+0 867-1	-356+0 696-1	3.0	588+0 472-1	219+0 -921+0	-367+1 -158+0
3.5	791-1 -827-1	-130+0 -855-1	-239+0 -140+0	3.5	476+0 720-1	265+0 -772+0	-386+1 -285+0
4.0	112+0 -357-2	-281-1 -154+0	150-2 -215+0	4.0	365+0 963-1	306+0 -633+0	-391+1 -457+0
4.5	593-1 651-1	764-1 -100+0	183+0 -125+0	4.5	260+0 115+0	338+0 -495+0	-386+1 -659+0
5.0	-257-1 746-1	107+0 124-1	200+0 410-1	5.0	164+0 131+0	356+0 -368+0	-367+1 -894+0
5.5	-774-1 262-1	537-1 927-1	724-1 152+0	5.5	784-1 138+0	362+0 -249+0	-343+1 -113+1
6.0	-642-1 -371-1	-313-1 894-1	-842-1 137+0	6.0	340-2 137+0	352+0 -142+0	-311+1 -136+1
6.5	-498-2 -656-1	-796-1 200-1	-153+0 236-1	6.5	-601-1 128+0	332+0 -474-1	-273+1 -156+1
7.0	496-1 -421-1	-593-1 -537-1	-990-1 -910-1	7.0	-112+0 110+0	298+0 337-1	-231+1 -172+1
7.5	600-1 101-1	375-2 -765-1	203-1 -121+0	7.5	-153+0 860-1	257+0 100+0	-186+1 -185+1
8.0	239-1 482-1	569-1 -379-1	107+0 -544-1	8.0	-182+0 568-1	208+0 153+0	-141+1 -192+1
8.5	-258-1 452-1	601-1 248-1	101+0 469-1	8.5	-200+0 245-1	156+0 190+0	-962+0 -192+1
9.0	-499-1 695-2	162-1 605-1	179-1 101+0	9.0	-208+0 -925-2	102+0 213+0	-530+0 -187+1
9.5	-329-1 -331-1	-355-1 449-1	-704-1 724-1	9.5	-206+0 -422-1	489-1 222+0	-126+0 -177+1
10.0	815-2 -440-1	-540-1 -412-2	-955-1 -976-2	10.0	-195+0 -732-1	-142-2 219+0	232+0 -161+1

TABLE D2.1 Poisson's Ratio = 0.45, B/C = 1

Rayleigh Waves ($\theta = 0°$)

A_0	U_1^*/R_H	U_3^*/R_H	$L\Phi_2^*/R_H$
0.0	100+1 000+0	000+0 -174+1	000+0 000+0
0.5	948+0 -715-3	935-2 -164+1	889+0 610-4
1.0	804+0 743-2	733-1 -138+1	162+1 531-2
1.5	588+0 335-1	185+0 -105+1	208+1 530-1
2.0	355+0 772-1	310+0 -715+0	221+1 182+0
2.5	146+0 113+0	398+0 -406+0	206+1 413+0
3.0	-161-1 122+0	429+0 -147+0	170+1 694+0
3.5	-128+0 963-1	398+0 514-1	122+1 942+0
4.0	-191+0 408-1	311+0 188+0	700+0 110+1
4.5	-206+0 -282-1	196+0 261+0	185+0 113+1
5.0	-182+0 -942-1	743-1 275+0	-258+0 101+1
5.5	-128+0 -145+0	-343-1 240+0	-588+0 790+0
6.0	-570-1 -171+0	-113+0 172+0	-778+0 488+0
6.5	185-1 -168+0	-156+0 867-1	-823+0 159+0
7.0	847-1 -137+0	-159+0 192-2	-733+0 -140+0
7.5	131+0 -880-1	-130+0 -680-1	-542+0 -369+0
8.0	152+0 -279-1	-789-1 -112+0	-297+0 -501+0
8.5	146+0 317-1	-185-1 -126+0	-422-1 -521+0
9.0	116+0 809-1	372-1 -111+0	177+0 -451+0
9.5	697-1 111+0	786-1 -758-1	332+0 -306+0
10.0	155-1 120+0	980-1 -270-1	401+0 -125+0

Rayleigh Waves ($\theta = 90°$)

A_0	U_2^*/R_H	U_3^*/R_H	$L\Phi_1^*/R_H$
0.0	100+1 000+0	000+0 -174+1	000+0 000+0
0.5	948+0 -715-3	935-2 -164+1	-889+0 -610-4
1.0	804+0 743-2	733-1 -138+1	-162+1 -531-2
1.5	588+0 335-1	185+0 -105+1	-208+1 -530-1
2.0	355+0 772-1	310+0 -715+0	-221+1 -182+0
2.5	146+0 113+0	398+0 -406+0	-206+1 -413+0
3.0	-161-1 122+0	429+0 -147+0	-170+1 -694+0
3.5	-128+0 963-1	398+0 514-1	-122+1 -942+0
4.0	-191+0 408-1	311+0 188+0	-700+0 -110+1
4.5	-206+0 -282-1	196+0 261+0	-185+0 -113+1
5.0	-182+0 -942-1	743-1 275+0	258+0 -101+1
5.5	-128+0 -145+0	-343-1 240+0	588+0 -790+0
6.0	-571-1 -170+0	-113+0 172+0	778+0 -488+0
6.5	185-1 -168+0	-156+0 867-1	823+0 -159+0
7.0	846-1 -137+0	-159+0 192-2	733+0 140+0
7.5	131+0 -880-1	-130+0 -679-1	542+0 369+0
8.0	152+0 -279-1	-789-1 -112+0	297+0 501+0
8.5	146+0 317-1	-185-1 -126+0	422-1 521+0
9.0	116+0 809-1	372-1 -111+0	-177+0 451+0
9.5	696-1 111+0	786-1 -758-1	-332+0 306+0
10.0	156-1 120+0	980-1 -270-1	-401+0 125+0

TABLE D2.2 POISSON'S RATIO = 0.45, B/C = 2

A_0	U_1^*/R_H	U_3^*/R_H	$L\Phi_2^*/R_H$	A_0	U_2^*/R_H	U_3^*/R_H	$L\Phi_1^*/R_H$
	Rayleigh Waves ($\theta = 0°$)				Rayleigh Waves ($\theta = 90°$)		
0.0	100+1 000+0	000+0 -174+1	000+0 000+0	0.0	100+1 000+0	000+0 -174+1	000+0 000+0
0.5	902+0 946-3	189-1 -155+1	865+0 447-3	0.5	975+0 -758-3	718-2 -168+1	-906+0 742-4
1.0	634+0 188-1	113+0 -110+1	144+1 172-1	1.0	901+0 138-2	484-1 -154+1	-172+1 -179-2
1.5	300+0 714-1	266+0 -598+0	156+1 116+0	1.5	782+0 112-1	106+0 -136+1	-240+1 -167-1
2.0	250-1 114+0	362+0 -169+0	127+1 338+0	2.0	632+0 305-1	186+0 -113+1	-288+1 -706-1
2.5	-140+0 964-1	342+0 128+0	773+0 580+0	2.5	470+0 598-1	275+0 -915+0	-313+1 -194+0
3.0	-201+0 219-1	222+0 283+0	223+0 705+0	3.0	311+0 910-1	356+0 -694+0	-318+1 -374+0
3.5	-175+0 -692-1	588-1 304+0	-243+0 645+0	3.5	167+0 115+0	414+0 -485+0	-304+1 -617+0
4.0	-907-1 -134+0	-864-1 224+0	-533+0 423+0	4.0	436-1 125+0	437+0 -298+0	-275+1 -898+0
4.5	133-1 -150+0	-168+0 947-1	-606+0 115+0	4.5	-552-1 118+0	434+0 -135+0	-236+1 -117+1
5.0	100+0 -113+0	-172+0 -342-1	-487+0 -173+0	5.0	-131+0 925-1	401+0 150-2	-189+1 -142+1
5.5	145+0 -411-1	-111+0 -121+0	-244+0 -354+0	5.5	-183+0 542-1	344+0 109+0	-138+1 -159+1
6.0	136+0 387-1	-210-1 -145+0	229-1 -386+0	6.0	-211+0 707-2	269+0 187+0	-867+0 -167+1
6.5	829-1 968-1	609-1 -111+0	228+0 -280+0	6.5	-217+0 -440-1	188+0 235+0	-366+0 -167+1
7.0	880-2 115+0	104+0 -405-1	314+0 -951-1	7.0	-205+0 -920-1	105+0 253+0	888-1 -156+1
7.5	-592-1 926-1	998-1 344-1	276+0 914-1	7.5	-175+0 -133+0	265-1 247+0	477+0 -137+1
8.0	-977-1 395-1	553-1 849-1	142+0 212+0	8.0	-132+0 -164+0	-411-1 219+0	782+0 -112+1
8.5	-969-1 -212-1	-632-2 948-1	-214-1 234+0	8.5	-816-1 -182+0	-936-1 175+0	989+0 -827+0
9.0	-613-1 -671-1	-587-1 659-1	-151+0 161+0	9.0	-270-1 -185+0	-129+0 121+0	109+1 -505+0
9.5	-827-2 -832-1	-820-1 134-1	-202+0 352-1	9.5	269-1 -175+0	-146+0 641-1	111+1 -190+0
10.0	415-1 -667-1	-704-1 -392-1	-167+0 -888-1	10.0	750-1 -152+0	-145+0 839-2	103+1 991-1

TABLE D2.3 Poisson's Ratio = 0.45, B/C = 3

A_0	Rayleigh Waves ($\theta = 0°$) U_1^*/R_H	U_3^*/R_H	$L\Phi_2^*/R_H$	A_0	Rayleigh Waves ($\theta = 90°$) U_2^*/R_H	U_3^*/R_H	$L\Phi_1^*/R_H$
0.0	100+1 000+0	000+0 -174+1	000+0 000+0	0.0	100+1 000+0	000+0 -174+1	000+0 000+0
0.5	859+0 228-2	227-1 -148+1	842+0 734-3	0.5	981+0 -279-3	677-2 -169+1	-908+0 -105-4
1.0	496+0 302-1	146+0 -889+0	128+1 297-1	1.0	933+0 131-2	312-1 -160+1	-175+1 -166-2
1.5	109+0 904-1	291+0 -292+0	116+1 168+0	1.5	850+0 555-2	747-1 -147+1	-251+1 -900-2
2.0	-131+0 959-1	304+0 120+0	682+0 389+0	2.0	742+0 166-1	135+0 -131+1	-312+1 -368-1
2.5	-206+0 194-1	174+0 304+0	119+0 510+0	2.5	616+0 357-1	201+0 -112+1	-356+1 -101+0
3.0	-152+0 -787-1	-101-1 286+0	-315+0 424+0	3.0	486+0 601-1	274+0 -947+0	-381+1 -233+0
3.5	-324-1 -131+0	-147+0 142+0	-498+0 173+0	3.5	354+0 851-1	342+0 -768+0	-389+1 -404+0
4.0	833-1 -112+0	-178+0 -288-1	-420+0 -110+0	4.0	232+0 108+0	394+0 -595+0	-383+1 -636+0
4.5	140+0 -349-1	-109+0 -140+0	-174+0 -292+0	4.5	123+0 122+0	428+0 -435+0	-363+1 -911+0
5.0	120+0 534-1	461-2 -154+0	934-1 -299+0	5.0	272-1 126+0	440+0 -285+0	-331+1 -119+1
5.5	420-1 104+0	937-1 -853-1	256+0 -157+0	5.5	-545-1 116+0	433+0 -152+0	-293+1 -147+1
6.0	-456-1 967-1	114+0 154-1	258+0 389-1	6.0	-119+0 975-1	406+0 -366-1	-248+1 -172+1
6.5	-976-1 398-1	683-1 888-1	128+0 178+0	6.5	-168+0 671-1	365+0 602-1	-198+1 -191+1
7.0	-918-1 -314-1	-939-2 101+0	-436-1 198+0	7.0	-200+0 320-1	309+0 137+0	-146+1 -203+1
7.5	-390-1 -770-1	-704-1 550-1	-161+0 106+0	7.5	-218+0 -877-2	247+0 194+0	-951+0 -208+1
8.0	274-1 -761-1	-827-1 -149-1	-171+0 -303-1	8.0	-221+0 -498-1	180+0 230+0	-453+0 -205+1
8.5	704-1 -340-1	-459-1 -670-1	-844-1 -129+0	8.5	-211+0 -898-1	112+0 248+0	527-2 -195+1
9.0	694-1 214-1	125-1 -743-1	377-1 -141+0	9.0	-189+0 -125+0	482-1 248+0	412+0 -177+1
9.5	304-1 585-1	569-1 -382-1	122+0 -695-1	9.5	-158+0 -154+0	-103-1 232+0	755+0 -154+1
10.0	-208-1 591-1	634-1 153-1	126+0 342-1	10.0	-119+0 -174+0	-604-1 204+0	102+1 -126+1

TABLE D2.4 POISSON'S RATIO = 0.45, B/C = 4

	RAYLEIGH WAVES (θ = 0°)					
A_0	U_1^*/R_H		U_3^*/R_H		$L\Phi_2^*/R_H$	
0.0	100+1	000+0	000+0	-174+1	000+0	000+0
0.5	816+0	119-2	304-1	-141+1	823+0	312-3
1.0	377+0	419-1	170+0	-702+0	114+1	398-1
1.5	-204-1	934-1	282+0	-730-1	854+0	202+0
2.0	-197+0	533-1	210+0	266+0	285+0	376+0
2.5	-175+0	-492-1	210-1	304+0	-207+0	360+0
3.0	-432-1	-118+0	-138+0	142+0	-426+0	146+0
3.5	888-1	-989-1	-168+0	-564-1	-338+0	-119+0
4.0	137+0	-121-1	-752-1	-164+0	-726-1	-262+0
4.5	877-1	743-1	526-1	-137+0	170+0	-210+0
5.0	-123-1	995-1	119+0	-238-1	248+0	-295-1
5.5	-880-1	527-1	898-1	820-1	147+0	138+0
6.0	-926-1	-251-1	605-3	110+0	-310-1	181+0
6.5	-325-1	-761-1	-745-1	565-1	-154+0	899-1
7.0	418-1	-674-1	-837-1	-283-1	-148+0	-502-1
7.5	766-1	-119-1	-305-1	-791-1	-386-1	-132+0
8.0	524-1	457-1	376-1	-648-1	813-1	-106+0
8.5	-617-2	641-1	684-1	-521-2	124+0	-523-2
9.0	-535-1	334-1	440-1	498-1	707-1	864-1
9.5	-561-1	-180-1	-102-1	605-1	-283-1	102+0
10.0	-176-1	-515-1	-502-1	246-1	-946-1	403-1

	RAYLEIGH WAVES (θ = 90°)					
A_0	U_2^*/R_H		U_3^*/R_H		$L\Phi_1^*/R_H$	
0.0	100+1	000+0	000+0	-174+1	000+0	000+0
0.5	988+0	694-3	482-2	-171+1	-911+0	-613-4
1.0	950+0	108-2	274-1	-164+1	-178+1	-604-3
1.5	888+0	330-2	561-1	-153+1	-257+1	-491-2
2.0	805+0	105-1	102+0	-140+1	-325+1	-259-1
2.5	706+0	220-1	158+0	-126+1	-381+1	-643-1
3.0	596+0	404-1	216+0	-110+1	-420+1	-143+0
3.5	482+0	606-1	278+0	-950+0	-445+1	-282+0
4.0	370+0	838-1	335+0	-800+0	-455+1	-440+0
4.5	262+0	102+0	381+0	-649+0	-451+1	-660+0
5.0	164+0	118+0	415+0	-506+0	-436+1	-925+0
5.5	748-1	124+0	431+0	-372+0	-411+1	-120+1
6.0	-281-2	123+0	435+0	-249+0	-377+1	-148+1
6.5	-696-1	113+0	424+0	-138+0	-338+1	-176+1
7.0	-125+0	944-1	401+0	-399-1	-292+1	-199+1
7.5	-168+0	700-1	364+0	442-1	-243+1	-217+1
8.0	-199+0	408-1	320+0	114+0	-192+1	-231+1
8.5	-219+0	526-2	269+0	168+0	-141+1	-238+1
9.0	-228+0	-301-1	213+0	208+0	-910+0	-239+1
9.5	-226+0	-650-1	156+0	233+0	-432+0	-233+1
10.0	-215+0	-986-1	995-1	244+0	127-1	-221+1