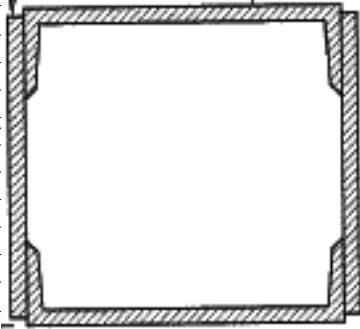


HP-35s Calculator Program – MAXIMUM ALLOWABLE COMPRESSIVE FORCE ON AXIALLY LOADED ELEMENT(S)

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| Line | Instruction | Process | User Instruction |
|------|-----------------|--|---|
| C001 | LBL C | Establishing the library | |
| C002 | BUILT UP COL | | Key in using EQN, RCL B, RCL U, etc |
| C003 | PSE | | |
| C004 | CLSTK | Clearing stack and storing 0 value in specific variables |  |
| C005 | STO I | | |
| C006 | STO Z | | |
| C007 | STO X | | |
| C008 | STO Y | | |
| C009 | STO A | | |
| C010 | STO N | | |
| C011 | RCL N | | |
| C012 | x≠0? | | |
| C013 | GTO C018 | | |
| C014 | I-X ELEMENT | Solving for Moment of Inertia of Element in X Axis | |
| C015 | PSE | | |
| C016 | x=0? | | |
| C017 | GTO C023 | | |
| C018 | I-Y ELEMENT | Solving for Moment of Inertia of Element in Y Axis | |
| C019 | PSE | | |
| C020 | CLSTK | | |
| C021 | STO I | | Nomenclature: |
| C022 | STO A | | |
| C023 | PLATE | | A = Cross Sectional Area |
| C024 | PSE | | B = Base Width of Plate Element |
| C025 | INPUT B | Base width of steel plate | D = Distance of element to N/A |
| C026 | INPUT H | H (thickness) of steel plate | F = Fy (Steel Yield Stress) |
| C027 | 3 | | G = Unbraced Length on X Axis |
| C028 | y^x | | H = Plate thickness |
| C029 | * | | I = Moment of Inertia |
| C030 | 12 | | K = K factor of column |
| C031 | ÷ | | L = Unbraced Length (Input for Both |
| C032 | RCL B | | Axes but used for Y Axis in |
| C033 | RCL H | | computation) |
| C034 | * | | M = Yes/No function (0=No) |
| C035 | DIST TO NA | Distance to Neutral Axis | N = Number of loop runs |
| C036 | PSE | | P = ΦP_n (Capacity in Axial Load) |
| C037 | INPUT D | Enter value of distance to N/A | R = Temporary variable |
| C038 | x^2 | Solving for Moment of Inertia $A*d^2$ portion | S = Temporary variable |
| C039 | * | | X = Final Moment of Inertia on X Axis |
| C040 | + | | Y = Final Moment of Inertia on Y Axis |
| C041 | RCL I | | |
| C042 | + | | |
| C043 | STO I | | |
| C044 | CLSTK | | |
| C045 | RCL B | | |
| C046 | RCL H | | |
| C047 | * | | |
| C048 | RCL A | | |
| C049 | + | | |
| C050 | STO A | | |
| C051 | CLSTK | | |
| C052 | MORE PLATES | Solving for more steel plates | |
| C053 | PSE | | |
| C054 | 0 | | |
| C055 | STO M | | |
| C056 | INPUT M | | |
| C057 | x≠0? | | |
| C058 | GTO C023 | | |
| C059 | ROLLED SECTIONS | Addressing values of rolled sections | |
| C060 | PSE | | |

| | | | |
|------|----------------|--|--|
| C061 | CLSTK | | |
| C062 | STO M | | |
| C063 | INPUT M | If there are rolled sections give value unequal to 0 | |
| C064 | x=0? | | |
| C065 | GTO C097 | | |
| C066 | I ROLL SCTN | | |
| C067 | PSE | | |
| C068 | RCL I | | |
| C069 | INPUT I | Enter value of moment of inertia of rolled section | |
| C070 | + | | |
| C071 | STO I | | |
| C072 | AREA ROLL SCTN | | |
| C073 | PSE | | |
| C074 | RCL A | | |
| C075 | STO B | | |
| C076 | INPUT A | Enter area of rolled section | |
| C077 | DIST TO NA | | |
| C078 | PSE | | |
| C079 | INPUT D | Enter distance to N/A | |
| C080 | x^2 | | |
| C081 | x | | |
| C082 | RCL I | | |
| C083 | + | | |
| C084 | STO I | | |
| C085 | CLSTK | | |
| C086 | RCL A | Resolving for total cross sectional area | |
| C087 | RCL B | | |
| C088 | + | | |
| C089 | STO A | | |
| C090 | ANOTHER ROLLED | | |
| C091 | PSE | | |
| C092 | CLSTK | | |
| C093 | STO M | | |
| C094 | INPUT M | Give value unequal to 0 if there is another rolled element | |
| C095 | x#0? | | |
| C096 | GTO C066 | | |
| C097 | CLSTK | | |
| C098 | RCL N | | |
| C099 | x#0? | | |
| C100 | GTO C106 | | |
| C101 | RCL I | | |
| C102 | STO X | | |
| C103 | 1 | | |
| C104 | STO N | | |
| C105 | GTO C011 | | |
| C106 | RCL I | | |
| C107 | STO Y | | |
| C108 | AREA | | |
| C109 | PSE | | |
| C110 | VIEW A | Viewing total area | |
| C111 | MOM INERTIA | | |
| C112 | PSE | | |
| C113 | VIEW X | Viewing Moment of Inertia on X axis | |
| C114 | VIEW Y | Viewing Moment of Inertia on Y axis | |
| C115 | CLSTK | | |
| C116 | RCL X | | |
| C117 | RCL A | | |
| C118 | ÷ | | |
| C119 | √x | | |
| C120 | STO R | | |
| C121 | RCL Y | | |
| C122 | RCL A | | |
| C123 | + | | |
| C124 | √x | | |
| C125 | STO S | | |
| C126 | CLSTK | | |
| C127 | K IF NONE (1) | Provide K value of axially loaded compression member | |
| C128 | PSE | | |

| | | |
|------|--------------|---|
| C129 | 1 | |
| C130 | STO K | |
| C131 | INPUT K | |
| C132 | L EFF X AXIS | |
| C133 | PSE | |
| C134 | INPUT L | Provide value of unbraced length in feet for X Axis |
| C135 | STO G | Storing value in variable G |
| C136 | L EFF Y AXIS | |
| C137 | PSE | |
| C138 | INPUT L | Provide value of unbraced length in feet for Y Axis |
| C139 | RCL S | |
| C140 | ÷ | |
| C141 | 12 | |
| C142 | × | |
| C143 | RCL K | |
| C144 | × | |
| C145 | RCL G | |
| C146 | RCL R | |
| C147 | ÷ | |
| C148 | 12 | |
| C149 | × | |
| C150 | RCL K | |
| C151 | × | |
| C152 | $x \leq y?$ | |
| C153 | $x < y$ | |
| C154 | STO K | |
| C155 | CTRL KLR | |
| C156 | PSE | |
| C157 | VIEW K | |
| C158 | CLSTK | |
| C159 | RCL K | |
| C160 | ENTER | |
| C161 | × | |
| C162 | 1/x | |
| C163 | π | |
| C164 | x^2 | |
| C165 | × | |
| C166 | 29000 | |
| C167 | × | |
| C168 | STO E | |
| C169 | 1/x | |
| C170 | STEEL FY | |
| C171 | PSE | |
| C172 | INPUT F | Enter yield strength of Steel in ksi |
| C173 | × | |
| C174 | 0.658 | |
| C175 | $x < y$ | |
| C176 | y^x | |
| C177 | RCL F | |
| C178 | × | |
| C179 | STO F | |
| C180 | F CRITICAL | |
| C181 | PSE | |
| C182 | VIEW F | Viewing Element's Critical Stress |
| C183 | RCLA | |
| C184 | × | |
| C185 | 0.9 | |
| C186 | × | |
| C187 | STO P | |
| C188 | PHI PN | |
| C189 | PSE | |
| C190 | VIEW P | Viewing Load capacity (LRFD) |
| C191 | STOP | End |
| C192 | RTN | |