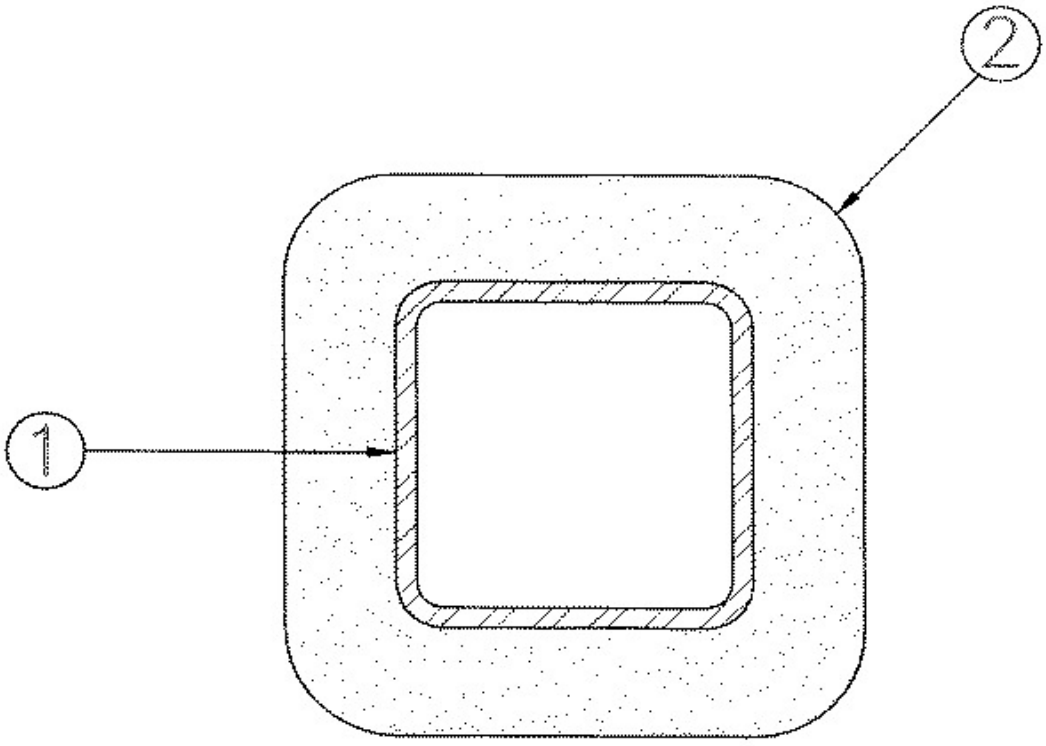
ULC Design No. Z810
March 23, 2004
Rating - See Table Below



Steel Building Column - Minimum size column HSS 550 x 550 x 25 mm, wall thickness with minimum M/D = 187.5.

· 1 (a). **Spray-Applied Fire-Resistive Material -** (Guide No. 40 U18.6). Applied to column surfaces which are clean and free of dirt, loose scale and oily deposits by spraying with water to thicknesses shown in Table. Minimum average dry density of 165 kg/m^3 with no individual values less than 148 kg/m^3. For method of density determination, refer to General Information Section under heading "Fire Resistance Ratings".

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Rating, h	Min Required Thickness of Spray-Applied Fire-Resistive Material , mm
1	7
1-1/2	11
2	14
3	21
4	27

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Alternatively, required thicknesses may be determined for $36.2 \leq M/D \leq 187.5$ by the following equations:

$$T/PV = 0.215\,(M/D) + 2.00$$

or

$$t = \frac{Tx1000}{dx\{0.215(M/D)+2.00\}}$$

Where:
t = required thickness, mm (7 mm minimum)
T = rating period, minutes (240 minutes maximum)
PV = protection value, kg/m^2
M = mass of column section, kg/m with $36.2 \leq M/D \leq 187.5$
D = heated perimeter of column section, m
d = density, kg/m^3 ($125\ kg/m^3 \leq d \leq 285\ kg/m^3$)

OR

1 (b). **Spray-Applied Fire-Resistive Material -** Material (see table below) - (Guide No. 40 U18.6). A/D "Type 5" spray-applied fire-resistive material for application to steel surfaces in thicknesses indicated in the following table. Mixture to have a minimum average dry density of $272\ kg/m^3$ with minimum individual density measurements no less than $248\ kg/m^3$. For method of density measurements, refer to General Information Section under heading "Fire Resistance Ratings". Steel surfaces must be clean and free of dirt, loose scale and oily deposits.

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Rating, h	Min Required Thickness, mm
1	7
1-1/2	11
2	14
3	21
4	27