

I am designing a steel beam with web penetrations exceeding the limits provided in AISC Design Guide 2: *Design of Steel and Composite Beams with Web Openings* (www.aisc.org/dg). The beam is part of a moment frame. Although I understand that the procedures provided in the design guide are not applicable, if these procedures are used to evaluate the condition, then the shear and flexural strength of the beam are significantly greater than the required loads. Is there any way to allow the larger opening?

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feel
in the change

Through-bolting HSS

Can through bolts be used to transfer tension at a HSS column? Will the bolts require pretensioning, or can they be installed snug-tight?

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HSS columns are designed to resist tension. Through bolts can be used to transfer tension at a HSS column. The bolts should be installed snug-tight. Pretensioning is not required. The design of the bolts and the connection should be checked according to AISC Design Guide 3.2: *Aluminum Connections* (www.aisc.org/dg). The design of the bolts and the connection should be checked according to AISC Design Guide 3.2: *Aluminum Connections* (www.aisc.org/dg). The design of the bolts and the connection should be checked according to AISC Design Guide 3.2: *Aluminum Connections* (www.aisc.org/dg).

Web Openings

I am designing a lightly loaded steel beam with web penetrations exceeding the limits provided in AISC Design Guide 2: *Design of Steel and Composite Beams with Web Openings* (www.aisc.org/dg). The beam is part of a moment frame. Although I understand that the procedures provided in the design guide are not applicable, if these procedures are used to evaluate the condition, then the shear and flexural strength of the beam are significantly greater than the required loads. Is there any way to allow the larger opening?

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Deal in change

1. AISC Design Guide 10: *E, B, R* (www.aisc.org/dg)
- ▶ AAH
 - ▶ ACE
 - ▶ CED