

### K-Brace for OCBF System

I am designing a 6-story office building with a K-brace system. The framing is using K-type bracing is to be designed for the unbalanced loading. Is that accurate? Designing the column for the forces specified in Section 14.3 seems very high. Is there any alternative, such as designing the column for the amplified seismic load?

Section 14.3 of the AISC Specification for Structural Steel Buildings (AISC 360-10) states that the design of columns in K-braced frames should be based on the unbalanced loading. This is because the K-bracing system is designed to resist lateral loads, and the columns are designed to resist the resulting moments and axial forces. The design of the columns should be based on the amplified seismic load, as specified in Section 14.3 of the AISC Specification. This is because the seismic load is amplified, and the columns are designed to resist the resulting forces.

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### Beam Bracing

I am designing a one-story open-framed (no decking) building and must provide lateral stability bracing of the beams. Working with the 2005 AISC Specification, Appendix 6.3 addresses the force required for both nodal and relative bracing in beams. I have a situation where nodal bracing is desired for architectural reasons. I am aware that this bracing force must be delivered to a rigid support at bracing ends. Does the bracing force act in an additive manner? For example, I have four parallel beams restrained from rotation via nodal bracing; does the bracing have to be proportioned to resist four times the force computed from Eq. A-6-7?

Appendix 6.3 of the 2005 AISC Specification addresses the force required for both nodal and relative bracing in beams. The force required for nodal bracing is given by Eq. A-6-7. The force required for relative bracing is given by Eq. A-6-8. The bracing force acts in an additive manner. For example, if you have four parallel beams restrained from rotation via nodal bracing, the bracing force must be proportioned to resist four times the force computed from Eq. A-6-7.

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### Channel Columns

What Section of the AISC Specification covers channel columns?

Section 14.3 of the AISC Specification for Structural Steel Buildings (AISC 360-10) covers channel columns. This section provides the design requirements for channel columns, including the design of the columns and the design of the connections.

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