AD 436: Section classification of a flat plate

SCI is sometimes asked how to determine the section class of a flat plate as BS EN 1993-1-1 does not include this section in table 5.2. The purpose of this note is to provide guidance.

A flat plate of width \( b \) and thickness \( t \) loaded in axial compression is not susceptible to local buckling because there is no intersection of plates to provide a stiff axis. Classification for axial compression is therefore irrelevant. If the plate is acting as a beam with the minor axis vertical, lateral torsional buckling about the minor axis does not occur. Lateral torsional buckling can occur due to bending about the major axis. It is assumed that the member is not likely to be designed plastically so the relevant limit is that for Class 3. SCI recommends a value of \( b/t \leq 19 \) to provide a conservative limit for the Class 3 - Class 4 boundary.

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