

Welded Beams / Columns - Weld Condition

Introduction

This technical note has been developed to provide customers with information regarding untrimmed weld condition which should be a consideration when ordering and processing product. Please take the time to read this information prior to placing an order and please contact BlueScope Steel Direct for further information if required.

Fillet Weld End Condition

All beams and columns manufactured at BlueScope Welded Products are welded with fillet welds using an automated process. Due to the nature of the automated welding process, the start and end of each weld are outside the nominal length and are not compliant with AS/NZS 1554.1:2014. These end sections of the beam/column should not be used.

All beams and columns ordered untrimmed will be supplied with extra length to accommodate for the lack of uniform weld at the start and finish of each beam/column.



Figure 1. Start of weld characterised by large weld bead

Weld Start (Large Weld Bead) - The start of the weld will typically initiate slightly inwards from the front edge leaving a build-up of weld resulting in a larger weld bead see Figure 1 (section to left of red vertical line). This section should not be used due to inconsistent mechanical properties.

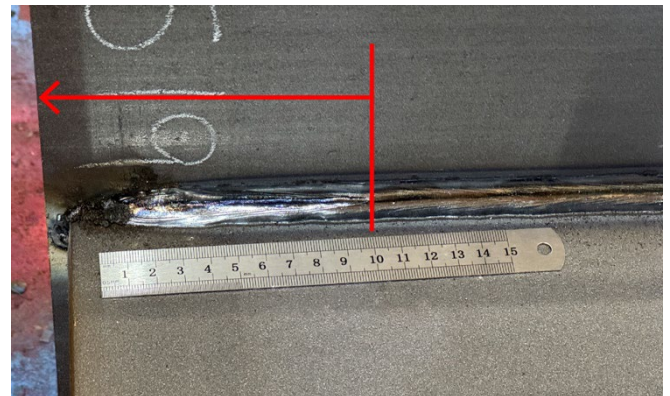


Figure 2. End of weld characterised by weld crater

Weld End (Weld Crater) – weld crater is a term used to describe the weld condition that occurs at the end of the welds on all 'untrimmed' beams and columns due to how the welding machines are stopped. A dip in throat size is seen which gradually reduces further until the end of the weld. Characterised by a 'V' that gradually increases in width up until the end of the weld. See Figure 2 (section to left of red vertical line). This section should not be used due to inconsistent mechanical properties.

Non-usable sections on untrimmed beam/column

- All beams and columns consist of 4 welds.
- See Figure 3 for sections affected by weld start (large weld bead) and weld finish (weld crater). These sections should not be used.

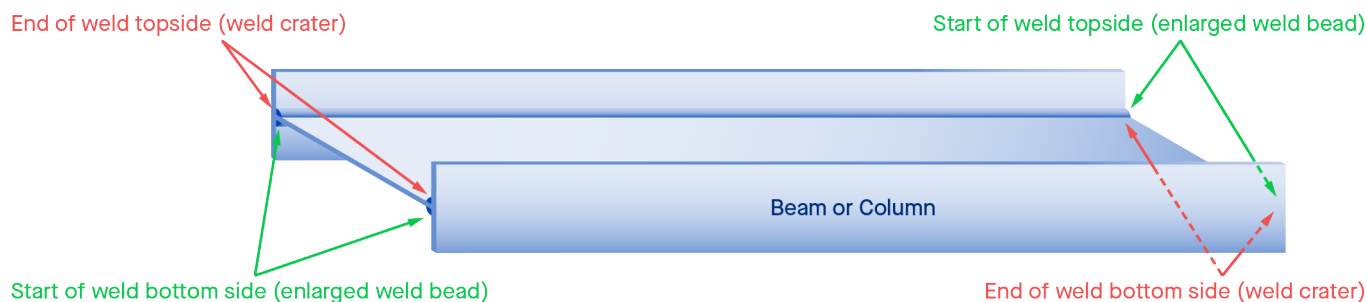


Fig 3. Location of non-usable sections due to weld start/stop conditions.

What you need to know

- Beam and column product when ordered 'untrimmed' will typically be supplied over ordered length by approximately 200mm to take into account the weld condition in welds at both ends of the beam and column.
- Options for the end user:
 - Cut away non-compliant weld sections off both ends of the beam/column product. Customer should assess the length of the non-compliant weld sections for each end of the beam/column for the amount to be cut off, or
 - Order beam/column as fully trimmed.

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To ensure you have the most current information

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