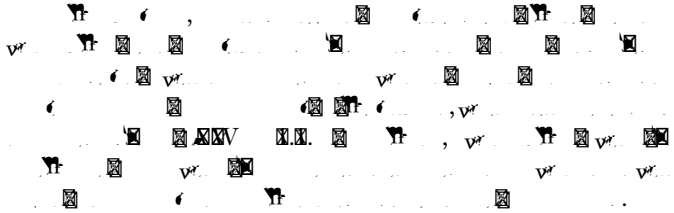


# What Every Fabricator Wants You to Know about Welding

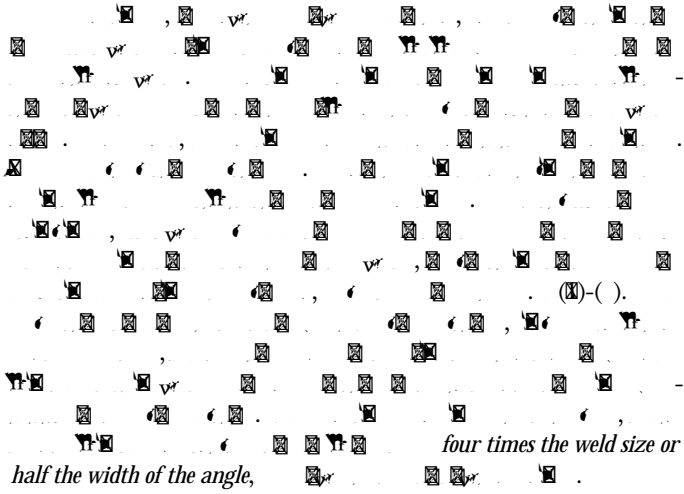
There are plenty of things that engineers can do to make the welder's work easier and more efficient.

IF YOU

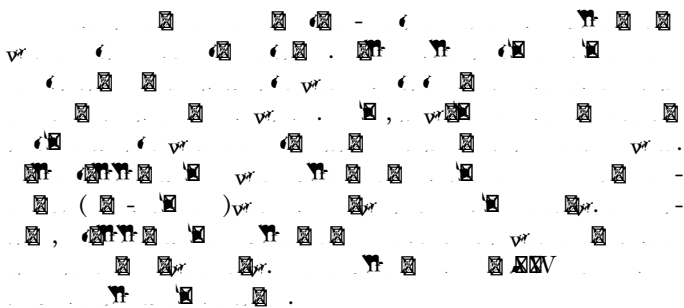
## Taking the Short Cut—Specifying the Joint Strength



### To return or not to return?




End return length = 2 (preferred), with a maximum of 4 or  $1/2 L$ , whichever is less.



## CVN Toughness

CVN toughness is a measure of the energy absorbed by a material during a Charpy impact test. It is expressed in Joules (J) and is a critical property for steel used in cold weather conditions. The CVN toughness of a steel grade is determined by the chemical composition and the manufacturing process. For example, S355 steel has a minimum CVN toughness of 27 J at 0°C, while S355K2 steel has a minimum CVN toughness of 27 J at -20°C. The CVN toughness of a steel grade is also affected by the thickness of the material, with thicker sections generally having lower CVN toughness values.

## Weld Design Information

Weld design information is essential for the safe and effective construction of steel structures. It includes details such as the type of joint, the size and position of welds, and the materials used for the welds. The design information must be based on the requirements of the relevant standards and codes of practice, such as BS 5950 and BS 5400. The design information should also take into account the specific conditions of the structure, such as the temperature, the loading, and the environment.

## Call to Action

It is essential that all steelwork is designed and constructed in accordance with the relevant standards and codes of practice. This includes ensuring that the steelwork is properly supported and braced during construction, and that the welds are properly inspected and tested. The design information should be clearly communicated to all parties involved in the construction process, and any changes should be properly documented and approved. The use of high-quality materials and skilled workmanship is also essential for the safe and effective construction of steel structures. The MSC logo is visible in the bottom right corner of the page.