

# Welding Instructions Mild Steel

## WELDING METHOD

Shielded metal arc welding (SMAW)  
Flux cord arc welding (FCAW)

## WELDERS' QUALIFICATION

Welders to be qualified according to AWS D1.1 latest edition

## CONSUMABLE SMAW (AWS 7018) FCAW (AWS E-71-T5)

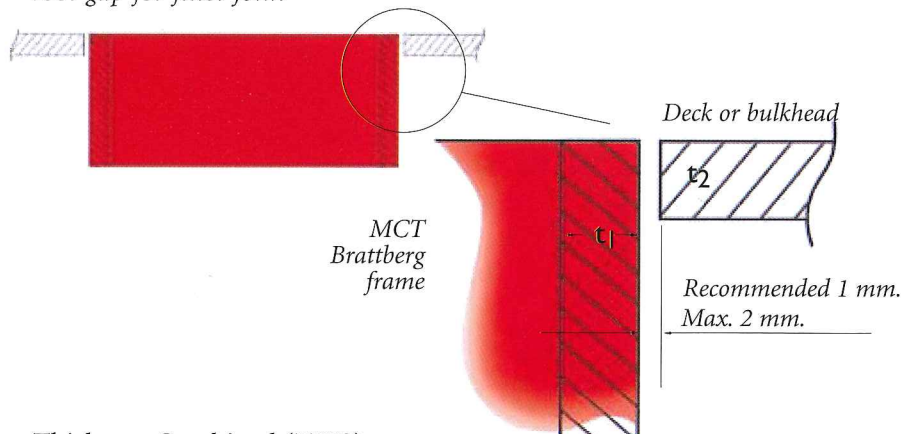
Consumable to be handled and treated according to manufacturer's recommendation.

## PREPARATION AND FIT UP

The prepared joint and surrounding areas shall be clean and free from moisture, oil, grease, loose or thick scale, oxides etc., or any protective coating except weldable primers.

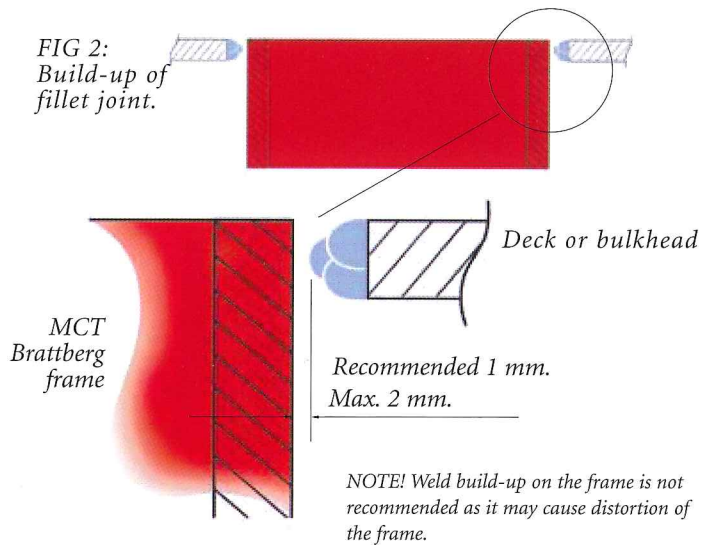
Maximum allowed root gap for fillet welds is recommended 1 mm, max 2 mm (see fig 1).

FIG 1:  
maximum allowable  
root gap for fillet joint



Thickness Combined (THC) =  $t_1 + t_2$   
If root gap is too wide the deck plate or bulkhead may be built-up with weld to achieve a proper gap.  
(see fig. 2)

FIG 2:  
Build-up of  
fillet joint.



## PREHEAT AND INTERPASS TEMPERATURE

To avoid hydrogen cracking when welding MCT Brattberg frames made of carbon, manganese or micro alloy steel  
Rel. \* 390N/mm<sup>2</sup>.

## IMPORTANT!

To avoid deformation of the frame it is recommended to follow this welding instructions

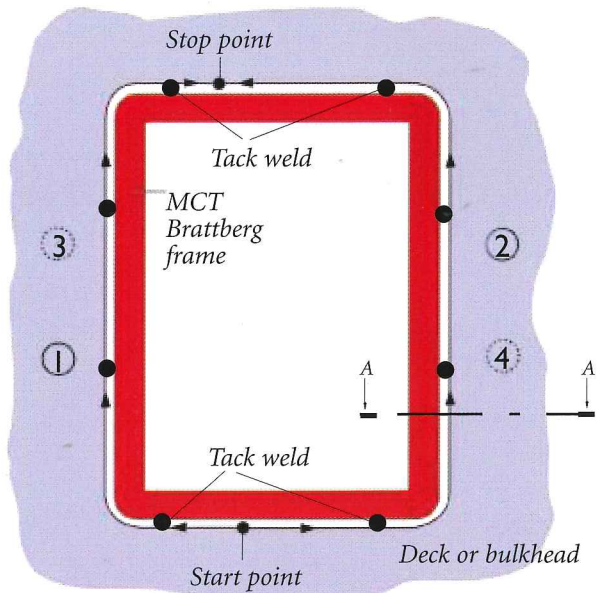
Putting safety first



## WELDING SEQUENCE

Welding to be performed according to fig 3 and 4.  
Weld pass 3 is not to be started until welds 1 and 2 are completed.

FIG 3:  
welding sequence  
(example shows a two-pass fillet weld)



Tack weld eatch /100 mm for less deformation of the frame

FIG 4:  
Welding sequence



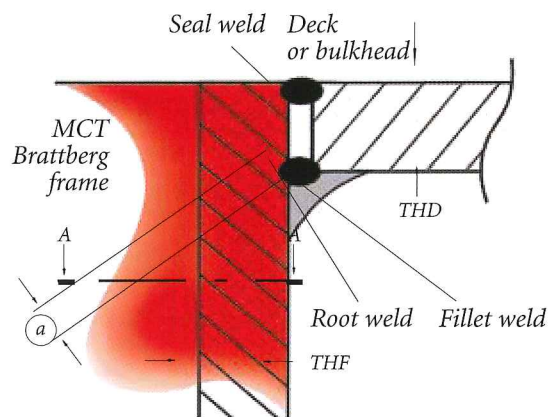
- 1.1 Root weld
- 2.1 Root weld
- 1.2 Fillet weld
- 2.2 Fillet weld
- 3 Seal weld
- 4 Seal weld

## WELD SIZE

Fillet weld size (throat thickness) is to be 0.5 x plate thickness of the bulkhead or deck plate (THD). However fillet weld size is not to be greater than 0.7 x frame plate thickness (THF). See fig 5.

$$\text{Thus: } 0.5 \times \text{THD} \leq (a) \leq 0.7 \times \text{THF}$$

FIG 5:  
Fillet weld size



(a) = fillet size (throat thickness).

THD = Thickness Deck plate.

THF = Thickness Frame plate.

**NOTE!**

Multi-pass welding is required if (a) ≥ 5 mm.



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