

# Welding instructions (mild steel)

## Welding method

Shielded metal arc welding (SMAW),  
Flux Core Arc Welding (FCAW)

## Welders qualification

Welders to be qualified according to  
AWS D1.1 latest edition or EN 287-1:2004

## Consumable SMAW or FCAW

Consumable to be handled and treated according to manufacturers recommendation.

## Preparation and fit

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

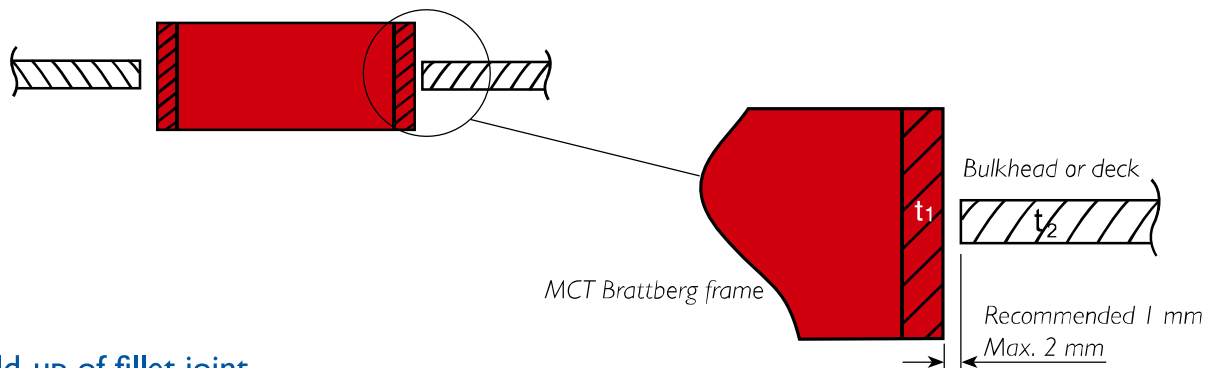
Maximum allowed root gap for fillet welds is 2 mm (see Figure 1).

## Interpass temperature

The inter-pass temperature must not exceed 250°C.

## Maximum allowable root gap for fillet joint

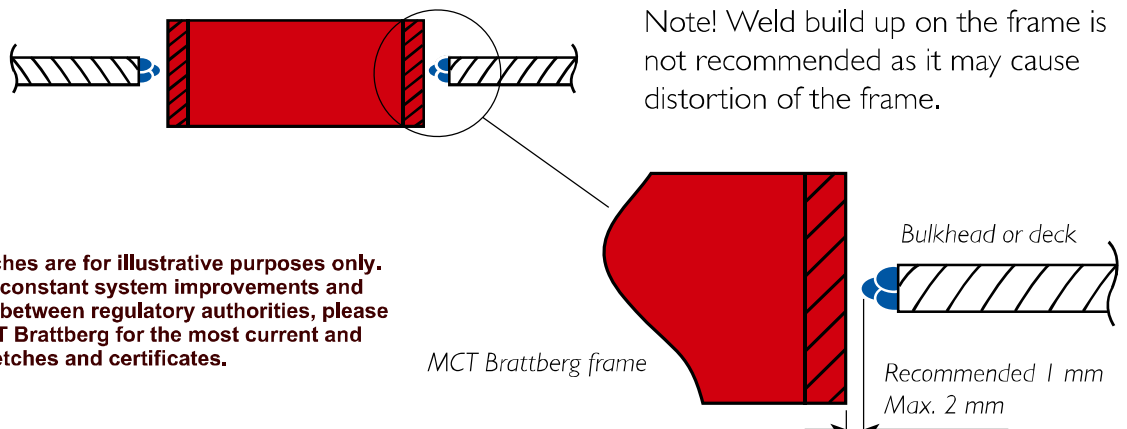
Figure 1



If root gap is too wide the deck plate or bulkhead may be built up with weld to achieve a proper gap (see Figure 2).

## Build-up of fillet joint

Figure 2



Note! Weld build up on the frame is not recommended as it may cause distortion of the frame.

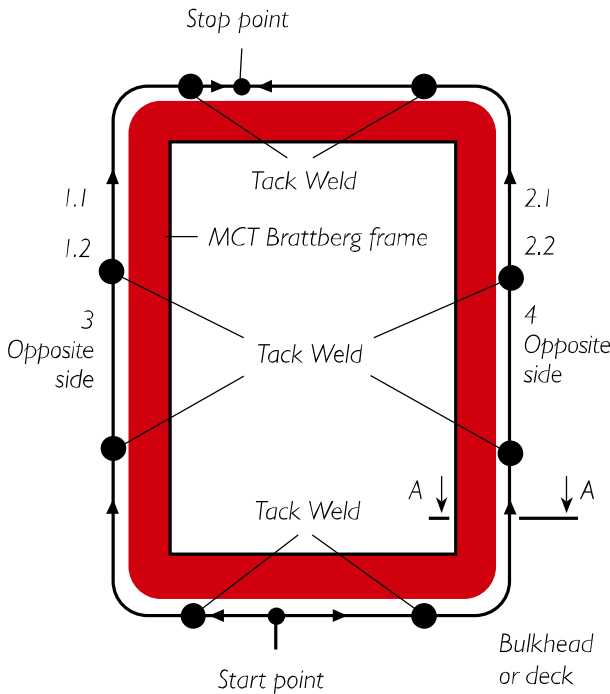
These sketches are for illustrative purposes only. Because of constant system improvements and differences between regulatory authorities, please consult MCT Brattberg for the most current and relevant sketches and certificates.

### Welding sequence

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

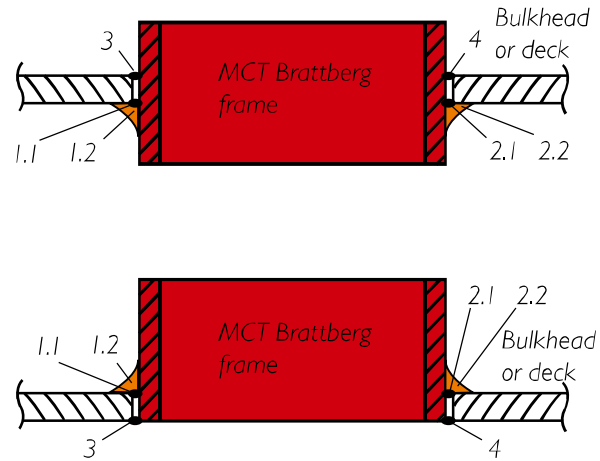
#### Welding sequence of a two-pass fillet weld

Figure 3



#### Welding sequence

Figure 4



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

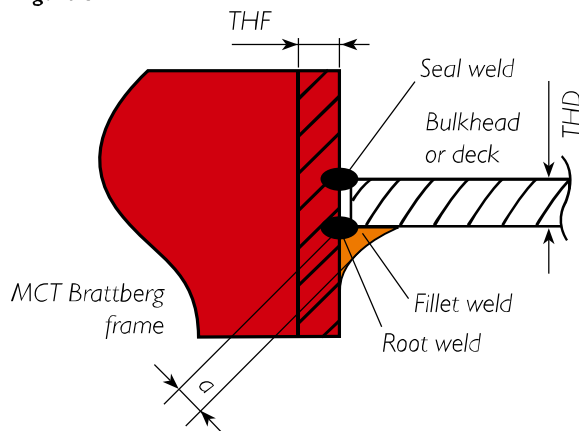
### Weld size

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.

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

#### Fillet weld size for a centre-placed frame

Figure 5



$a$  = Fillet size (throat thickness)

THD = Thickness deck plate

THF = Thickness frame plate

Note! Multi-pass welding is required if

$$a \geq 5 \text{ mm}$$

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