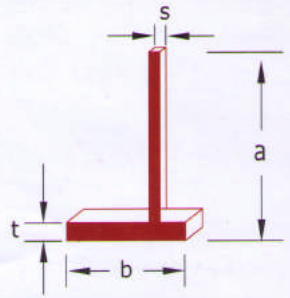
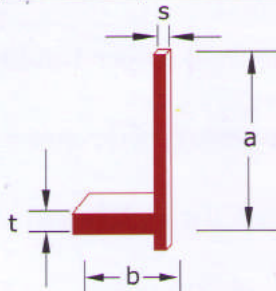


Non-Symmetrical Profiles

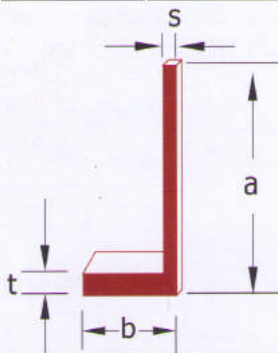
L - Profiles



| Profile type | Range | Height a mm | Width b mm | Web thickness s mm | Flange thickness t mm |
|--------------|----------|-------------|------------|--------------------|-----------------------|
| L-profiles | Standard | 200-1 000 | 200-200 | 10-15 | 15-35 |
| Type 35 | Min-Max. | 200-3 000 | 200-900 | 6-50 | 10-50 |



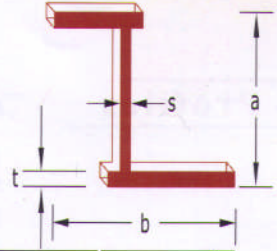
| Profile type | Range | Height a mm | Width b mm | Web thickness s mm | Flange thickness t mm |
|--------------|----------|-------------|------------|--------------------|-----------------------|
| L-profiles | Standard | 250-1 000 | 200-200 | 10-15 | 15-35 |
| Type 36 | Min-Max. | 250-1 400 | 200-900 | 6-50 | 10-50 |



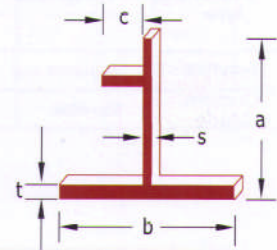
| Profile type | Range | Height a mm | Width b mm | Web thickness s mm | Flange thickness t mm |
|--------------|----------|-------------|------------|--------------------|-----------------------|
| L-profiles | Standard | 250-1 000 | 100-200 | 10-15 | 15-35 |
| Type 37 | Min-Max. | 250-3 000 | 100-900 | 6-50 | 10-50 |

Non-Symmetrical Profiles

Special Profile

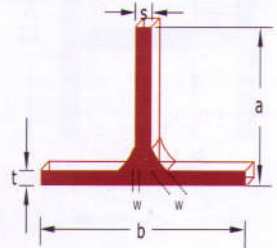


| Profile type | Range | Height a mm | Width b mm | Web thickness s mm | Flange thickness t mm |
|--------------|-----------|-------------|------------|--------------------|-----------------------|
| Special | Standard | 350-1500 | 400-900 | 8-20 | 12-35 |
| I-profiles | Min- Max. | 300-3 200 | 200-900 | 8-40 | 10-50 |



| Profile type | Range | Height a mm | Width b mm | Web thickness s mm | Flange thickness t mm |
|--------------|-----------|-------------|------------|--------------------|-----------------------|
| Special | Standard | 300-1 000 | 100-400 | - | 10-25 |
| T-profiles | Min- Max. | 300-3 000 | 100-1 000 | 100-500 | 6-30 |

Container Guide



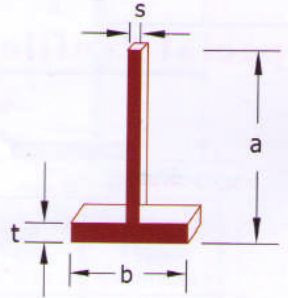
| Profile type | Height a mm | Width b mm | Thickness of flange t mm | Thickness Web's mm | Weld Size thickness t w w' |
|------------------|-------------|------------|--------------------------|--------------------|----------------------------|
| Container guides | 200-500 | 200-500 | 10-25 | 20-50 | 3 6 |

Please Note

In the Container guides table, w stands for weld penetration and w^t for throat thickness.

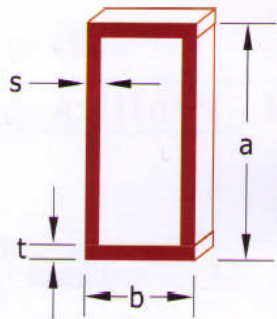
Non-Symmetrical Profiles

T - Profiles

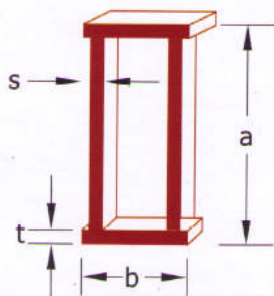


| Profile type | Range | Height a mm | Width b mm | Web thickness s mm | Flange thickness t mm |
|--------------|----------|-------------|------------|--------------------|-----------------------|
| T-profiles | Standard | 200-1 000 | 200-400 | 10-15 | 15-40 |
| Custom Made | Min-Max. | 200-3 000 | 200-900 | 6-50 | 10-50 |

Box - Profiles

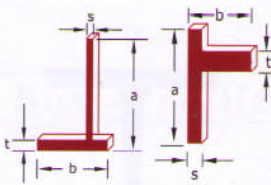


| Profile type | Range | Height a mm | Width b mm | Web thickness s mm | Flange thickness t mm |
|--------------|----------|-------------|------------|--------------------|-----------------------|
| Box-profiles | Standard | 600-2 000 | 400-100 | 10-25 | 12-50 |
| Custom Made | Min-Max. | 400-2 500 | 400-1500 | 10-100 | 10-120 |



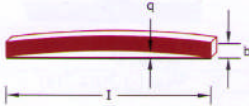
| Profile type | Range | Height a mm | Width b mm | Web thickness s mm | Flange thickness t mm |
|--------------|----------|-------------|------------|--------------------|-----------------------|
| Box-profiles | Standard | 600-2 000 | 400-1000 | 10-40 | 12-50 |
| Custom Made | Min-Max. | 400-2 500 | 400-1500 | 10-100 | 10-120 |

Web and flange of standard L, T and I Profiles



| Standard Thickness S and T mm | Thickness Tolerance mm | Width Tolerance mm | Length Tolerance mm | Height Tolerance mm |
|-------------------------------|------------------------|--------------------|---------------------|---------------------|
| 8<15 | +1.4/-0.3 | +/-2 | -0/+100 | +/-3 |
| 15<25 | +1.6/-0.3 | +/-2 | -0/+100 | +/-3 |
| 25<40 | +1.9/-0.3 | +/-2 | -0/+100 | +/-3 |
| 40<80 | +2.5/-0.3 | +/-2 | -0/+100 | +/-3 |

Straightness Tolerance

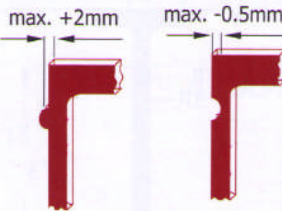


Standard

Special

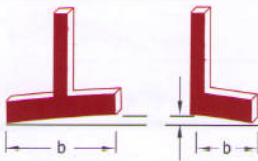
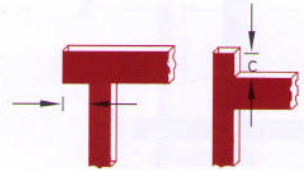
q max. = 1mm pr meter

q max. = 1/2mm pr meter

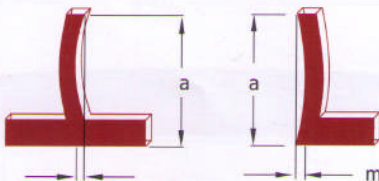


Welded reinforcements for profile type 37

Position of flange c-tolerances for profiles type 35 and 36: +5mm

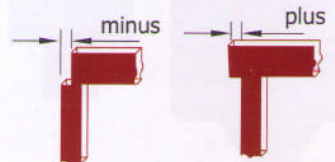


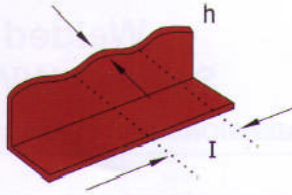
Angular distortion k
K max. = 0.01 x b



Web flatness deviation m
m max. = 0.006 x a

Position of flange Out of true profile Type 37: +/-1mm



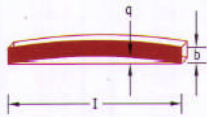
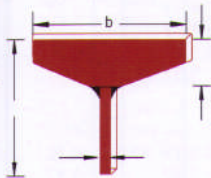


Web buckling
 h max. 2mm for $l < 700$ mm
 h max. $0.003 \times l$ for $l \geq 700$ mm
 $l = \text{max. } 3\ 000$ mm

Please Note:

- The Standard throat thickness for fillet welds is $0.34 \times s$ (thickness of web). Minimum throat size 2.5mm Other throat thickness, or full penetration welds, are available through special agreement. Weld tolerances meet standard ANSI / AWS D 1.1 -83
- Narrower tolerances can be provided through special agreement.

| Designation | Dimension Standard Range BxTxX | Width tolerance of flange mm | Thickness tolerance of web mm | Height tolerance | Length tolerance mm |
|-----------------|--------------------------------|------------------------------|-------------------------------|------------------|---------------------|
| TB 90X25/30 | 90X25/30X350-1 000 | +/-2.0 | +1.4/-0.3 | +/-3.0 | -0/+100 |
| TB 100X25/30 | 100X25/30X350-1 000 | +/-2.0 | +1.4/-0.3 | +/-3.0 | -0/+100 |
| TB 115X25/30/35 | 115X25/30/35X350-1 000 | +/-2.0 | +1.4/-0.3 | +/-3.0 | -0/+100 |
| TB 130X30/35/40 | 130X30/35/40/45X350-1 000 | +/-2.0 | +1.4/-0.3 | +/-3.0 | -0/+100 |
| TB 160X35/40/45 | 160X35/40/45X350-1 000 | +/-2.0 | +1.4/-0.3 | +/-3.0 | -0/+100 |
| TB 180X35/40/45 | 180X35/40/45X350-1 000 | +/-2.0 | +1.4/-0.3 | +/-3.0 | -0/+100 |
| TB 200X40/45 | 200X40/45X350-1 000 | +/-2.0 | +1.4/-0.3 | +/-3.0 | -0/+100 |
| TB 250X40/45 | 250X40/45X350-1 000 | +/-2.0 | +1.4/-0.3 | +/-3.0 | -0/+100 |



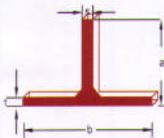
Straightness Tolerance

Standard

q max. = 1 mm / meter

Special

q max. = 1/2 mm / meter

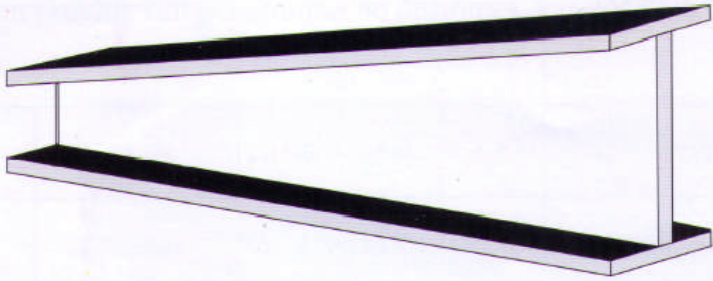


| Profile type | Dimension bxtxa mm | Width Tolerance of flange mm | Thickness tolerance mm | Length tolerance mm |
|------------------|---------------------|------------------------------|------------------------|---------------------|
| Container guides | 500x500x10-25x20-25 | +/-2 | +/-1 | -0/+100 |

Straightness Tolerance

q max. = 0.00125x1

TAPERED - CURVED - CAMBERED SECTIONS



SUBMERGED-ARC WELDING

| | | | | | | | | |
|--|----------|----------|----------|---------|---------|---------|---------|---------------|
| Welding Position: Horizontal Weld Quality Level: Commercial Steel Weldability: Good | | | | | | | | |
| L: Weld Size, (mm) | 4-6 | 6-8 | 8-10 | 10-12 | | 12-16 | | 16 Above |
| T: Plate Thickness (mm) | 6-10 | 10-12 | 12-16 | 16-20 | | 20-40 | | 40 Above |
| Pass | 1 | 1 | 1 | 1 | 2 | 2 | 2 | Multi Pass |
| Electrode Size | 2.4-3.2 | 3.2-4 | 3.2-4 | 3.2-4 | 3.2-4 | 4-5 | 4-5 | 4-5 |
| Current (amp) DC (-)/ DC (+) | 400-500 | 450-550 | 500-600 | 550-650 | 600-700 | 600-750 | 650-800 | 850 Max |
| Volts | 28-32 | 30-34 | 32-36 | 34-38 | 34-38 | 34-38 | 34-38 | 34-38 |
| Arc Speed (mm/min.) | 700-1200 | 700-1100 | 600-1000 | 600-800 | 500-800 | 500-700 | 500-700 | 400-600 |
| E: Electrode Angle (degree) | 45-55 | 45-55 | 45-55 | 45-65 | 40-55 | 45-65 | 40-55 | 40-55 |

WELDED SHAPES

Full Penetration Welds

Full penetration welds for webs less than $\frac{1}{2}$ " (14mm) thick.
Above 14 mm, we can provide full penetration on customer demand with groove weld.

