

SkillWeld 2010

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THE WELDING EXPERTS®



SkillWeld 2010

Competition Starter Pack

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SkillWeld 2010 National Welder Competition

Competition Rules

1.1 Who is eligible?

Any welder who is currently under training may enter the SkillWeld National Welder Competition. They must be proficient in MMA, TIG and MIG/MAG. Their age will not be an obstacle to the final result of the SkillWeld 2010 competition outcome. However, selection of the candidate who may go to London to represent the UK in the World Skills Competition will depend on them having been born after 1st January 1989.

1.2 How to register

Registration can be made by going on to www.airproducts.co.uk/skillweld Where the correct documentation can be found.

1.3 Where the competition will be carried out

We will advise you of the name and addresses of the Regional Competition Centres. It is not necessary for all candidates selected by a particular source to attend the same Regional Centre, as in some cases there may be a centre closer to some candidates than others.

N.B. Candidates may only register at one centre.

1.4 When will the competition be carried out?

The Regional Competition will be carried out in February 2010. (The Regional Centre will advise you of their specific competition date).

Candidates will be required to arrive at 0900 hrs on their given competition date. Competition briefing, centre induction and safety checks will take 30 minutes, allocation of material, etc., a further 30 minutes. The competition will start at 10:00 hrs and will be completed by 15:00 hrs allowing 1 hr for lunch break. Candidates who finish earlier must leave the competition area if they intend to wait for colleagues.

Candidates will be responsible for the provision of their own correct Personal Protection Equipment for each of the fusion welding processes they intend to carry out during the Welding Competition.

1.5 What has to be done

Included in the pack are drawings of four weld tests covering the three main manual fusion processes. As the following table shows, all test pieces are mandatory.

| TEST NO. | PROCESS | TEST PIECE | REQUIREMENT |
|-----------------|----------------|---|--------------------|
| 1 | MMA | Pipe butt weld H-Lo 45 in carbon steel | Mandatory |
| 2 | TIG | Pipe to plate fillet weld in the PB position in Aluminium | Mandatory |
| 3 | TIG | Plate fillet weld in the PD position in stainless steel | Mandatory |
| 4 | MAG | Plate fillet weld in the PF position in carbon steel | Mandatory |
| | | | |

Candidates will have material for one test piece for each of the four tests.

All test pieces must be completed within four hours. Regional judging of test pieces will take place during and on completion of the competition, in the absence of all candidates. SkillWeld 2010 judges will inform candidates of the results.

Finalists will be selected for the SkillWeld 2010 national finals, which will take place at TWI Cambridge on 6th to 9th April 2010 on completion of all regional finals.

The winner of the SkillWeld 2010 national competition will be announced on 9th April together with the candidates who achieved second and third places.

If any of the winning candidates in the first three places are outside the criteria required by the UK Skills Committee to represent the UK in London additional candidates may be selected who meet the age requirement, thereby allowing the committee to select between candidates of qualifying age.

The SkillWeld 2010 Committee emphasizes that the winner of the national finals is not necessarily the candidate who will be selected to represent the UK at the World Skills Competition in London in 2011 as other personal skills will be taken into account by the committee in reaching their decision on the best candidate to meet this role prior to representing the UK in London, if selected the finalist will undergo intensive training at an advanced master craft welder-training centers.

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National Welder Competition Master Registration Form

Candidate Name:

Date of Birth:

Training Centre/College or
Work Address:

Home Address:

Training Centre/College or
Works Contacts:

Home Telephone:

Mobile Telephone:

Email address:

Names: _____

Tel No's: _____

Fax No's: _____

Email's: _____

Candidate Signature

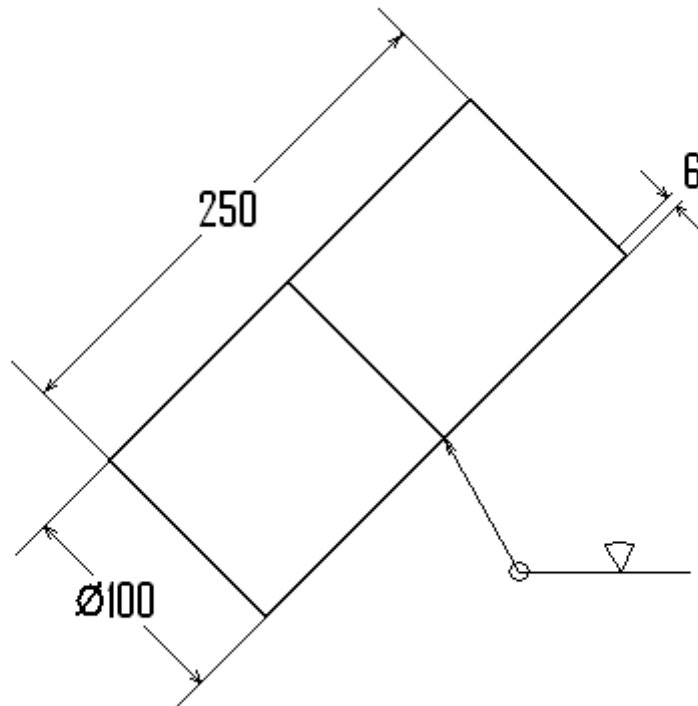
Sponsor Signature

Sponsor Name (Block Capitals)
Employer or College

Test No 1 (Mandatory) MMA

Weld Specification

Test Specification

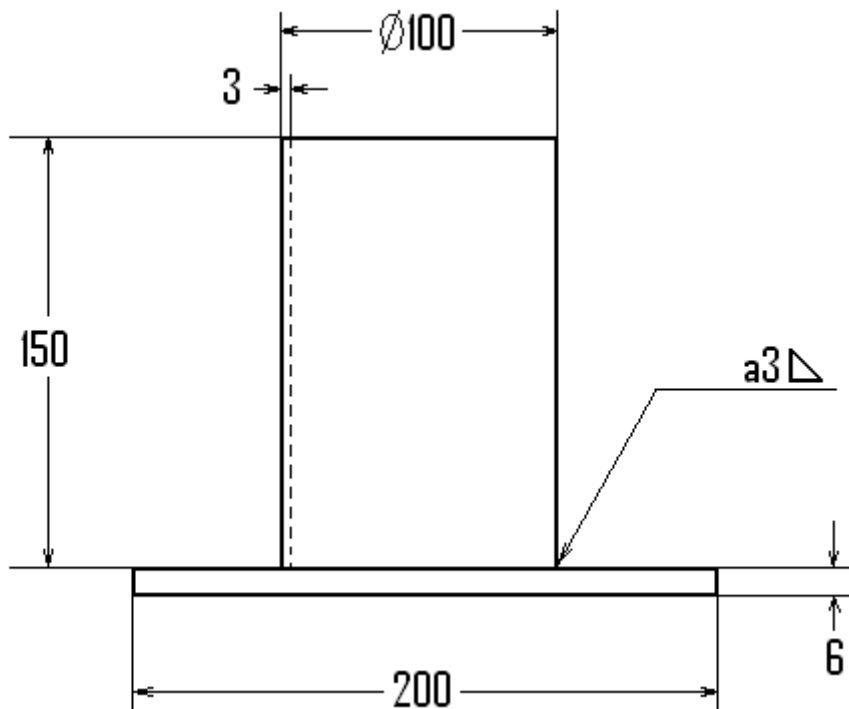


| | | <u>Visuals</u> |
|-----------------------|---------------|---------------------------------------|
| Materials | Carbon Steel | 12 O'clock pipe position to be marked |
| Weld Prep | 37.5° bevel | |
| Root Face | As required | |
| Weld Gap | As required | Root stops and starts to be marked |
| Weld Process | MMA | |
| Current Type | AC or DC | |
| Electrode Type | Any | Root Penetration – 2mm (max) |
| Electrode Dia | As required | Overfill – 3mm (max) |
| Number of Runs | As required | |
| Weld Position (Fixed) | H-Lo 45 | |
| Stop/Starts | May be ground | All dimensions in millimetres. |

Test No. 2 (Mandatory) TIG

Weld Specification

Test Specification

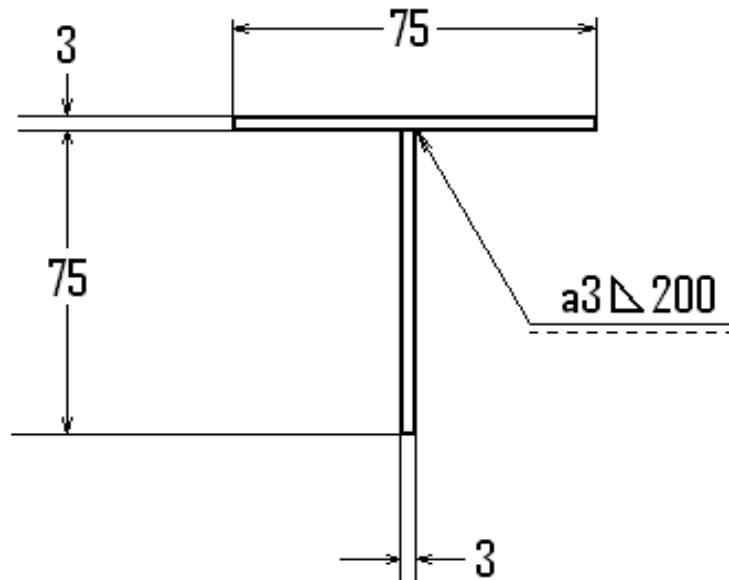


| | | <u>Visuals</u> |
|----------------------------|-------------|-----------------------------------|
| Materials | Aluminium | Weld stop and starts to be marked |
| Weld Process | TIG | |
| Current Type | AC | |
| Electrode Dia | As required | |
| Filler Dia | As required | |
| Shielding Gas | Pure Argon | |
| Weld Position | PB | |
| Number of Runs | 1 | |
| No Grinding of Stop/Starts | | All dimensions in millimetres. |

Test No. 3 (Mandatory) TIG.

Weld Specification

Test Specification

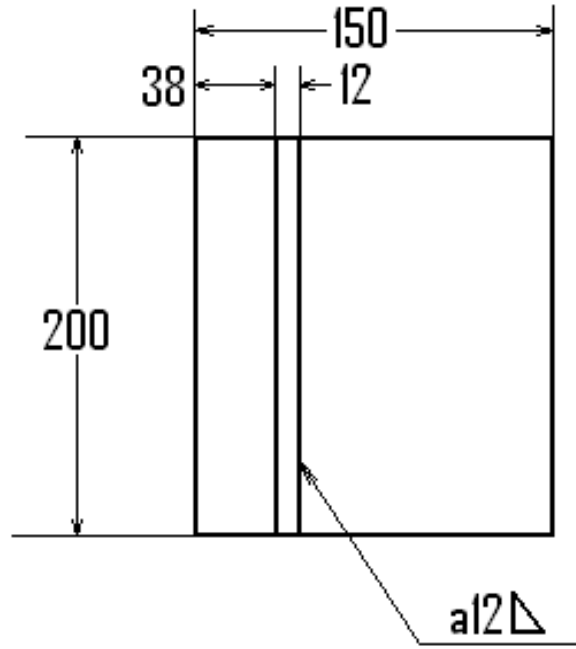


| | | <u>Visuals</u> |
|----------------------------|-----------------|--|
| Materials | Stainless Steel | Weld stop and starts to be made at weld mid point and marked |
| Weld Process | TIG | |
| Electrode Dia. | As required | |
| Filler Dia. | As required | |
| Shielding Gas | Pure Argon | |
| Current Type | DC | |
| Number of Runs | 1 | |
| Weld Position | PD | |
| No Grinding of Stop/Starts | | All dimensions in millimetres |

Test No.4 (Mandatory) MIG/MAG.

Weld Specification

Test Specification



NOTE –

Flange thickness 12mm
Web depth 100mm

| | | <u>Visuals</u> |
|----------------------------|-----------------------|---|
| Materials | Carbon Steel | Weld stops and starts to be made at weld mid point and marked |
| Weld Process | MAG | |
| Electrode Dia. | 1.0mm | |
| Shielding Gas | Argon/CO ₂ | |
| Number of Runs | As required | |
| Weld Position | PF | |
| Stop/starts may be ground. | | All dimensions in millimetres |

Test Piece Marking (Based on BS EN 25817)

Butt Welds

1.1. Penetration (max 15 marks)

This is required over the full length of the weld. Full marks will be given where the penetration is completely made but does not exceed 3mm. Penetration, which exceeds this value, will lose 1 mark for every 2mm length over penetration. The same rule will apply where evidence of lack of penetration is observed.

1.2. Stop Start Positions (max 10 marks)

Full marks will be given where clear evidence of good stop start fusion is obtained.

1.3 Overfill (max 10 marks)

The overfill should not be higher than 3 mm above the plate surface. Of the 10 marks apportioned for this section 1 mark will be lost where overfill exceeds this dimension over each 5mm of weld length where this is evident.

1.4. Undercut (max 10 marks)

The toes of the weld should blend with the plate surface with no high re-entry angle. Undercut should be absent. Of the 10 marks allocated 1 mark will be lost for every 5mm of undercut or poor toe blending present.

1.5. Weldface Appearance (max 15 marks)

The bead ripple should be regular on the weldface and weld penetration. Marks will be lost where the ripple is marked, irregular or weld profile uneven.

Fillet Welds

1.1. Throat (max 15 marks)

The throat thickness must be that stated in the drawing. Marks will be lost where there is evidence of failure to achieve this requirement as shown either by direct throat measurement or unequal leg measurement.

1.2 Stop Start Marks (max 10 marks)

Full marks will be given where clear evidence of good stop start fusion is obtained.

1.3 Weld Overfill (max 10 marks)

This must not exceed 2mm (test 2 and 3) and 4mm (test 4). 1 mark will be lost for every 5mm of weld length where this is in evidence.

1.4 Weld Undercut (max 10 marks).

Weld undercut on either plate will lose marks – 1 mark for every 5mm of weld length on either plate where undercut exceed is identified.

1.5 Weld Appear (max 15 marks)

The ripple should be even on the weld face. The weld `bead width should be regular throughout its length.

SkillWeld

WELDING ASSESSORS MARKING SHEET

Assessment Date:

| | | | |
|-----------------------|--|---------------|--|
| <u>Candidate Name</u> | | Candidate No. | |
|-----------------------|--|---------------|--|

| | | | |
|---------------------|--|------------------|--|
| Regional Assessors: | | Regional Centre: | |
|---------------------|--|------------------|--|

Test 1 MMA Pipe Butt Weld (H-Lo 45 Position) Carbon Steel (Mandatory)

Root Pen /15 Stop Start /10 Overfill /10 Undercut /10 Weld App /15

Test 2 TIG Pipe to Plate Fillet Weld (PB Position) Aluminium (Mandatory)

Throat Thick /15 Stop Start /10 Overfill /10 Undercut /10 Weld App /15

Test 3 TIG Plate Fillet Weld (PD Position) Stainless Steel (Mandatory)

Throat Thick /15 Stop Start /10 Overfill /10 Undercut /10 Weld App /15

Test 4 MAG Plate Fillet Weld (PF Position) Carbon Steel (Mandatory)

Throat Thick /15 Stop Start /10 Overfill /10 Undercut /10 Weld App /15