204: Installation of wiring systems and enclosures  
**Worksheet 4-080: Gusset bend in cable tray**

**NB**: Students must not attempt this exercise before the correct use of all tools and materials has been demonstrated.

**Technical data**

* You are to make sure that your work area is clear and safe for work to proceed.
* You are to make sure that all your work conforms to the requirements of the Health and Safety at Work Act.
* Ensure that the cable tray is not cut across the slots.
* Ensure that all edges are deburred.
* Use only pencil to mark dimensions on the cable tray.
* The work area must be restored to a satisfactory condition on completion.

**Material required**

|  |  |
| --- | --- |
| 550mm | Metal cable tray 150mm wide |
| 8 off | M6 x 12mm pan head steel set pins |
| 8 off | M6 steel nuts |

**Procedure**

1. Enter the start time on the assessment sheet.
2. Prepare the material requisition.
3. **Have the requisition checked before proceeding.**
4. Obtain the material stated from the stores.
5. Mark square and cut one end of the cable tray, taking care to meet the requirements of the technical data.
6. From the squared end mark lines at 200mm, 300mm and 500mm, as shown on the diagram.
7. **Have work checked before proceeding.**
8. Take extreme care to mark out correctly the two angled lines at the 200m and 300mm marks so that the completed angle will be 90°.
9. **Have work checked before proceeding.**
10. Cut and square the tray at the 500mm mark.
11. Cut along these two angled lines and mark the three pieces ‘A’, ‘B’ and ‘C’, as shown in the diagram.
12. Make two fillets for joining the cable tray out of tray off-cuts.
13. Remove any burrs and sharp edges from the face of the cable tray and fillets.
14. Turn section ‘C’ round and rejoin to sections ‘A’ and ‘B’ to form a 90° bend using fillets and M6 pins and nuts.
15. Remove any burrs and sharp edges, and recheck angle and dimensions.
16. **Hand the work to the Lecturer for assessment.**
17. Enter the finish time on the assessment sheet.
18. Restore the work area to a satisfactory condition.

|  |
| --- |
| Task 04-080 Cable Tray Gusset Bend.png |

Assessments are based on **observed** safety procedures, and the **quality** and **accuracy** of the completed exercise.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | **YES** | **NO** |
| **1.** | Material requisition correct first time | | **□** | **□** |
| **2.** | Method statement completed | | **□** | **□** |
| Assessed by: ………....………….. | | |  | |
| **3.** | Wore appropriate PPE | | **□** | **□** |
| **4.** | Acquired the correct materials and equipment | | **□** | **□** |
| **5.** | Correct position of line marked at 200mm | | **□** | **□** |
| **6.** | Correct position of line marked at 300mm | | **□** | **□** |
| **7.** | Correct position of line marked at 500mm | | **□** | **□** |
| **8.** | All marking out in pencil (tray surface undamaged) | | **□** | **□** |
|  | Assessed by: ………....………….. | |  | **□** |
| **9.** | Used only the given length of tray | | **□** | **□** |
| **10.** | Used wood blocks/other suitable tray protection | | **□** | **□** |
| **11.** | Bend set to correct angle of 90° | | **□** | **□** |
| **12.** | Both fillets 95mm x 53mm | | **□** | **□** |
| **13.** | Section ‘A’ to ‘C’ and ‘B’ to ‘C’ maximum gap 2mm | | **□** | **□** |
| **14.** | Section ‘A’ assembled with outside dimension 200m | | **□** | **□** |
| **15.** | Section ‘B’ assembled with outside dimension 200m | | **□** | **□** |
| **16.** | Section ‘C’ assembled with outside dimension 100m | | **□** | **□** |
| **17.** | Slots on tray ends intact, straight and square | | **□** | **□** |
| **18.** | All pins and nuts tight, and nuts on **outside** of tray | | **□** | **□** |
| **19.** | Cable bearing surface undamaged | | **□** | **□** |
| **20.** | Burrs, sharp edges and any vice marks removed | | **□** | **□** |
| **21.** | Overall appearance to a commercially acceptable standard | | **□** | **□** |
| **22.** | Work area conformed to requirements of HASAWA | | **□** | **□** |
| **23.** | Correct safety procedures observed at all times | | **□** | **□** |
| **24.** | Work area restored to a satisfactory condition on completion | | **□** | **□** |
| Assessed by: ………....………….. | | |  | |
| Start Date & Time: ………………........………….. | | Finish Date & Time: ……...…...........…………… | | |
| Target Time: 2 hours | | Time Taken: …………………….........…………… | | |