ARC ENTERPRISES, INC.
STEEL FABRICATION
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Heat Cambering and Straightening Procedure

Purpose: This procedure describes the method for heat cambering and straightening.

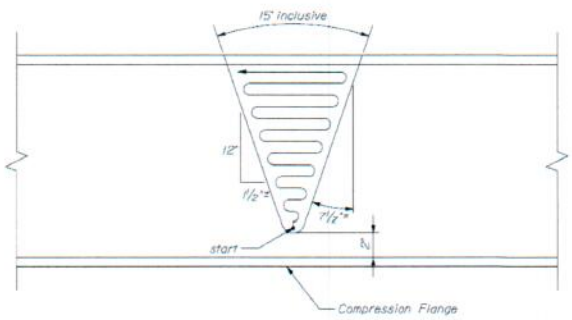
Responsibility: Production Manager

Procedure:

- Method of heating: #12 heating tip. Both sides shall be heated simultaneously.
  Gas / Oxygen: 18 – 31 psi – oxygen. 8 – 15 psi – gas.
  Heat range is 1,100 to 1,250 maximum degrees Fahrenheit. Appropriate temp sticks shall be used to verify the above temperature requirements are met. The surface temperature of the heated areas shall be tested with the appropriate temp stick approximately ten (10) seconds after removal of the heat source. Temperatures exceeding 1,250 degrees Fahrenheit will be cause for rejection.
- Members to be heat cambered shall be supported at each end with the compression flange down.
- Heating patterns shall be equally spaced along the length of the girder. Heating shall begin at the midpoint of the girder and shall alternate either side of the girder midpoint working toward the ends of the girder.
- Web heating progression shall be according to the "half lap" technique. Once started, each heat pattern shall be carried on to completion without interruption. Each heat pattern shall be heated only once. Two (2) torches are to be used – one on each side of the girder web.

Flange heating procedure:

- Upon completing the web portion, heating of the flange areas shall commence without pause, also using the "half lap" technique. The flanges shall be concurrently heated top and bottom on each side of the flange centerline, heating from the web centerline toward the outside edge of the flange. Each flame heat shall alternate starting point from one side of the web centerline to the other side, reducing the possibility of sweep induction.
- After heat cambering, the heat patterns shall be allowed to cool in still air to 600 degrees Fahrenheit. If necessary, compressed air may be used to cool the beam below 600 degrees Fahrenheit.
- If the required camber has not been achieved, additional heat points shall be located evenly throughout the length of the girder at locations which have not been previously heated.
- All heating shall be carried out in the presence of the QA Inspector.



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Heat Straightening Procedure

Purpose:

This procedure describes the method for heat straightening beams.

Responsibility: Production Manager

Procedure:

- Method of heating: #12 heating tip. Both sides shall be heated simultaneously.
  Gas / Oxygen: 18 – 31 psi (oxygen). 8 – 15 psi (gas).
  Heat range is 1,100 to 1,250 maximum degrees Fahrenheit. Appropriate temp sticks shall be used to verify the temperature requirements are met. The surface temperature of the heated areas shall be tested with the appropriate temp stick approximately ten (10) seconds after removal of the heat source. Temperatures exceeding 1,250 degrees Fahrenheit will be cause for rejection.
- Members to be heat straightened shall be supported at each end (with sweep up) and shall be blocked to prevent excess movement.
- Heat patterns shall be placed from midpoint working toward both ends of the girder.

Flange heating procedure:

- Two (2) torches shall be used, concurrently heating both sides of the flange, starting at the inside of the sweep and working across the flange using the "half lap" technique.
- After heat straightening, the heat patterns shall be allowed to cool in still air to 600 degrees Fahrenheit. If necessary, compressed air may be used to cool the steel below 600 degrees Fahrenheit.
- If the required straightness has not been achieved, additional heat points shall be located evenly throughout the length of the girder at locations which have not been previously heated.
- All heat straightening shall be carried out in the presence of the QA Inspector.