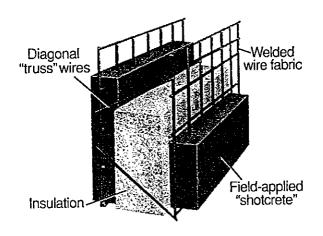
## 3-D PANEL BUILDING SYSTEM



# **QUALITY ASSURANCE PROGRAM**

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## ICS 3-D PANEL WORKS, INC.

## **QUALITY ASSURANCE PROGRAM**

## **SECTION I - MILL ORDER REVIEW**

- A. Upon receipt of customer's purchase order, it will be transferred to an ICS 3-D Panel Works, Inc. sales order form by the sales department.
- B. Special care will be taken to verify
  - 1. Quantities
  - 2. Panel sizes
  - 3. Gauge of wire to be used
  - 4. Amount and gauge of accessory material
  - 5. Thickness of expanded polystyrene to be used
- C. After review and scheduling of production, the customer will be advised concerning delivery.

#### **SECTION II - RAW MATERIALS**

- A. Specification to suppliers
  - Welded Mesh: All suppliers of welded mesh will be informed in writing that 100% of the product delivered to ICS 3-D Panel Works, Inc. shall meet American Society of Testing Materials (ASTM) Specification A-185. In addition, suppliers will be charged with supplying mesh that conforms to "Specifications for ICS 3-D Panel Works, Inc. 3-D Panel Building System" sheet.
  - 2. Polystyrene: The polystyrene foam core shall have a minimum density of 0.9 pounds per cubic foot and shall comply with ASTM Specification C578-07a. Suppliers will have the following information printed on each panel:
    - a. The foam density
    - b. ASTM E84 test results
    - c. NFiPA 259 test results
    - d. Manufacturers label

The panels are to be delivered straight and damage free.

- 3. Galvanized Wire: All galvanized wire used in the manufacture of the 3-D panels will conform to ASTM A82.
- B. All suppliers of incoming raw materials shall be inspected at the time of arrival for conditions mentioned in Section (A.) above. The steel shall be further inspected to see that it did not incur water damage during transit.

Any damage or poor quality shall be indicated on the shipping papers and the appropriate supplier will be notified.

C. Rejected material shall be identified at the time of reject using the appropriate tag which shall include the "reason for reject." If practical, the rejected material shall be stored in a separate location. Following notification of the supplier, the material will be disposed of in the appropriate manner that complies with environmental regulations, preferably returned for credit to the supplier.

## SECTION III - PRODUCTION PROCEDURES

- A. Preparatory Inspection: After mesh coils are mounted on the uncoiler mandrels, the first six feet of the coil will be measured to determine if spacing is within limits. Likewise, as polystyrene panels are unpacked and loaded into the entry magazine, they will be examined for defects (cracks or gouges). Wire will be inspected in a similar manner as it is rewound onto spools. Observations here will focus on the quality and continuity of the zinc coating. Any quality problems detected will be reported at once to the supervisor.
- B. Manufacturing Controls: It is the responsibility of the operating crew and supervisor to monitor all phases of production activity to insure that only quality product is being produced. Any equipment producing unacceptable product is to be stopped immediately and the necessary action taken to remedy the source of the trouble. Any products produced that fail to meet the quality standards are to be removed to the reject area at once.
  - 1. Welds: Welds on both sides of the panel are to be visually inspected during fabrication. No more than 1% of broken welds will be allowed on either side of any prime panel. Panels failing to meet this requirement may be successfully reconditioned using the portable patch welder.
  - 2. Shearing off excess staywire: No more than 4% of the total staywire welds in any one panel shall have staywires protruding beyond %" above the surface of the panel. Panels failing to meet this requirement may be successfully reconditioned.
  - 3. Broken wires: Breaks in wires are permissible only if the number of breaks do not exceed more than 2% of the total number of wires in any one panel. It is permissible to have patch wires welded in place to bridge over breaks in mesh wires.
  - 4. Overall dimensions: Overall panel dimensions shall comply with tolerances listed below:

Overall length  $\pm \frac{1}{4}$ " panels less than 12'

± 1/2" panels 12' and greater

Overall width  $\pm \frac{1}{6}$ "
Overall thickness  $\pm \frac{1}{4}$ "
Location of inserts within units  $\pm \frac{1}{2}$ "

#### SECTION IV - RECONDITIONING STATION RESPONSIBILITY

Besides the items listed below, workers in this area are charged to see that panels leaving the station are in overall prime condition including no bent wires and the correct identification is securely attached.

- A. Staywire: Occasionally staywires are missing. They must be replaced with straight lengths of the proper gauge wire secured within ½" of the position of the original wire.
- B. Welds and broken wires: Welds can successfully be repaired using the Miller WT 2530 Spot Welder. Caûtion will be exercised to see that the proper heat setting and compression is achieved. Broken wires can be successfully repaired using another short piece of the same gauge wire welded adjacent to the break.
- C. Dimensions: Panel can successfully be lengthened by adding the correct size of a like panel utilizing cover mesh to bridge the connection on both sides of the panel. Cover mesh must be attached using a minimum of 30 connector clips per piece of cover mesh. (This procedure will not be used unless agreed to by the customer ahead of time.)

#### SECTION V - PACKAGING AND LOADING

Loading instructions are typically received at the time the order is taken. Special packaging and shipping instructions are included on the mill order. Due to the light weight of the product, every effort will be made by the plant to insure loading is conducted in such a manner so as to maximize the efficient use of space. Panels will be stretch-wrapped and/or tarped according to the customers wishes. (ICS can not insure that damage will not incur to a covering tarp during transit.) On a flatbed truck, bands will be attached to the bundles of panels in such a manner as to prevent damage. Sufficient blocking lumber to secure the load along with instructions and assistance will be provided to all truckers.