



JUL 09 2015

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
MANILA

897.13 DPWH
07-10-2015

DEPARTMENT ORDER)

No. **105**)

Series of 2015)


SUBJECT: **DPWH Standard Specification
for Item 1041 - Gypsum Board**

07-10-15)

In line with the mandate of the Department in providing effective standard specifications in the implementation of various infrastructure projects and in view of the need of setting a standard specification for Gypsum Board, the attached **DPWH Standard Specification for Item 1041 - Gypsum Board** is hereby prescribed, for the guidance and compliance of all concerned.

This specification shall form part of the on-going revision of the DPWH Standard Specifications for Public Works Structures (Buildings, Ports and Harbors, Flood Control and Drainage Structures and Water Supply Systems), Volume III, 1995 Edition.

This Order shall take effect immediately.


ROGELIO L. SINGSON
Secretary

Department of Public Works and Highways
Office of the Secretary



WIN5U01106

DPWH STANDARD SPECIFICATIONS FOR ITEM 1041 – GYPSUM BOARD

1041.1 Description

This Item shall consist of furnishing and installing gypsum board for ceiling and walls in accordance with this Specification and at the locations shown on the Plans, or as required by the Engineer.

1041.2 Material Requirements

Gypsum board shall comply with the Standard Specification for Gypsum Board, ASTM C 1396 regular and Type X (special fire-resistant gypsum board) with thicknesses as indicated on drawings, 1200 mm wide by maximum practical length, ends square cut and edges bevelled.

1041.2.1 Accessories

- a. Joint materials shall be as recommended by gypsum board manufacturer for intended purpose.
- b. Metal furring runners, hangers, tie wires, inserts, and anchors galvanized.
- c. Drywall furring channels shall be 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- d. Resilient drywall furring shall be 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- e. Nails shall conform to ASTM C 514.
- f. Steel drill screws shall conform to ASTM C 1002.
- g. Laminating compound shall be as recommended by the manufacturer, asbestos-free.
- h. Casing beads, corner beads, control joints and edge trim shall conform to ASTM C 1047, metal, zinc-coated by hot-dip process 0.5 mm base thickness, perforated flanges, one piece length per location.
- i. Insulating strip shall be rubberized, moisture resistant, 3 mm thick cork strip, 12 mm wide with self-sticking permanent adhesive on one face, lengths as required.
- j. Joint compound shall conform to ASTM C 475, asbestos-free.

1041.3 Manufacturer Requirements

The manufacturer shall have a minimum of five (5) years in experience.

1041.4 Construction Requirements

All gypsum board works shall be installed by experienced personnel qualified to do this particular specialty trade.

1041.4.1 Preparation

Protect surrounding areas and surfaces to preclude damage. Avoid soiling, spatter, and damage to work of other trades. Use cover cloths or other means of protection. Remove, clean, and repair soiled or damaged work.

1041.4.2 Application

- a. Gypsum board shall not be applied until bucks, anchors, blocking, sound attenuation, electrical and mechanical works are approved.
- b. Single/double layer gypsum board shall be applied to wood or metal furring or framing using screw fasteners. Maximum spacing of screws shall be 300 millimeters on center.
- c. Base layer shall be applied to ceilings prior to base layer application on walls; apply face layers in same sequence. Offset joints between layers at least 250 millimeters.
- d. Base layers shall be applied at right angles to supports unless otherwise indicated.
- e. Base layer on walls and face layers shall be applied vertically with joints of base layer over supports and face layer joints offset at least 250 millimeters with base layer joints.
- f. Single layer gypsum board shall be applied to concrete or concrete block surfaces, where indicated, using laminating adhesive.
- g. Gypsum board shall be braced or fastened until fastening adhesive has set.
- h. Gypsum board shall be mechanically fastened at the top and bottom of each sheet.

1041.4.3 Installation of Gypsum board

Gypsum board shall be installed in accordance with ASTM C 840 and manufacturer's instruction, except as otherwise specified. Gypsum boards shall be used in maximum practical length to minimize number of end joints. Provide and install moisture and mold-resistant glass mat gypsum wallboard products with moisture-resistant surfaces complying with ASTM C 1658 where shown and in locations which might be subject to moisture exposure during construction. Gypsum board shall be brought into contact, but shall not be forced into place.

For Ceilings:

1. For single-ply construction, perpendicular application shall be used.
2. For two-ply assemblies:
 - a. Perpendicular application shall be used.
 - b. Face ply of gypsum board shall be applied so that joints of face ply do not occur at joints of base ply with joints over framing members.

For Walls (Except Shaft Walls):

1. When gypsum board is installed parallel to framing members, space fasteners shall be 300 millimeters on center in field of the board and 200 millimeters on center along edges.
2. When gypsum board is installed perpendicular to framing members, space fasteners shall be 300 millimeters on center in field and along edges.
3. Screws shall be staggered on abutting edges or ends.
4. For single-ply construction, apply gypsum board with long dimension either parallel or perpendicular to framing members as required to minimize number of joints except when gypsum board shall be applied vertically over "Z" furring channels.
5. For two-ply gypsum board assemblies, apply base ply of gypsum board to assure minimum number of joints in face layer. Apply face ply of wallboard to base ply so that joints of face ply do not occur at joints of base ply with joints over framing members.

6. For three-ply gypsum board assemblies, apply plies in same manner as for two-ply assemblies, except that heads of fasteners need only be driven flush with surface for first and second plies. Apply third ply of wallboard in same manner as second ply of two-ply assembly, except use fasteners of sufficient length enough to have the same penetration into framing members as required for two-ply assemblies.
7. No offset in exposed face of walls and partitions shall be permitted because of single-ply and two-ply or three-ply application requirements.
8. Installing Two Layer Assembly Over Sound Deadening Board:
 - a. The face layer of wallboard shall be applied vertically with joints staggered from joints in sound deadening board over framing members.
 - b. Fasten face layer with screw, of sufficient length to secure to framing, spaced 300 millimeters on center around perimeter, and 400 millimeters on center in the field.
9. Control Joints shall conform to ASTM C 840 and as follows:
 - a. Locate at both side jambs of openings if gypsum board is not "yoked". Use one system throughout.
 - b. Not required for wall lengths less than 9000 mm (30 feet).
 - c. Extend control joints the full height of the wall or length of soffit/ceiling membrane.

For Accessories:

1. Accessories shall be set plumb, level and true to line, neatly mitered at corners and intersections and securely attach to supporting surfaces as specified.
2. Install in one piece without the limits of the longest commercially available lengths.
3. Corner Beads:
 - a. Shall be installed at all vertical and horizontal external corners and where shown.
 - b. Use screws only. Do not use crimping tool.
4. Edge Trim (casings Beads):
 - a. At both sides of expansion and control joints unless shown otherwise.
 - b. Where gypsum board terminates against dissimilar materials and at perimeter of openings, except where covered by flanges, casings or permanently built-in equipment.
 - c. Where gypsum board surfaces of non-load bearing assemblies abut load bearing members.

1041.4.4 Finishing of Gypsum board

1. Joints, edges, corners, and fastener heads shall be finished in accordance with ASTM C 840. Level 4 finished shall be used for all finished areas open to public view.
2. Before proceeding with installation of finishing materials, the following shall be assured:
 - a. Gypsum board is fastened and held close to framing or furring.
 - b. Fastening heads in gypsum board are slightly below surface in dimple formed by driving tool.
3. Finish joints, fasteners, and all openings, including openings around penetrations, on that part of the gypsum board extending above suspended ceilings to seal surface of non-decorated smoke barrier, fire rated and sound rated gypsum board construction. After the installation of hanger rods, hanger wires, supports, equipment, conduits, piping and similar work, seal remaining openings and maintains the integrity of the smoke barrier, fire rated and sound rated construction. Sanding shall not be required of non- decorated surfaces.

1041.5 Field Conditions

Temporary control shall be maintained to regulate heating, ventilating, moisture, and humidity levels. There shall be sufficient temporary lighting to perform work to achieve specified finishes.

1041.6 Delivery and Storage

- a. Deliver materials in original unopened packages, containers or bundles bearing the manufacturer's name, and product name and number.
- b. Store materials in compliance with the manufacturer's recommendations, and in an enclosed ventilated shelter providing protection from the elements. Neatly store and stack board flat, not on its end or edge, to prevent toppling sagging or damage to the ends, edges or surfaces.
- c. Remove damaged or deteriorated materials and replace with new at no additional cost.

1041.7 Acceptance Requirements

The surfaces of installed gypsum board shall be true and free from imperfections, properly aligned and properly fixed and joined.

1041.8 Method of Measurement

The quantity to be paid for shall be the number of square meters (m²) bounded by the perimeter of the area covered by the gypsum board as shown in the Plans.

1041.9 Basis of Payment

The quantity as determined per Section 1041.8, completed and accepted by the Engineer, shall be paid at unit cost stated in the Bill of Quantities, which payment constitutes full compensation for furnishing the materials, labor, tools and equipment and incidentals necessary to complete the work prescribed in this Item.

Payment will be made under:

Pay Item Number	Description	Unit of Measurement
1041 (a)	Gypsum board (Walls)	Square Meters (m ²)
1041 (b)	Gypsum board (Ceilings)	Square Meters (m ²)

References:

- 1. American Society for Testing and Materials (ASTM)***
- 2. National Gypsum Board Products***
- 3. United State Gypsum Spec link***
- 4. Gypsum Association***
- 5. NL Master Specification Guide for Public Funded Buildings***
- 6. Master Specification***