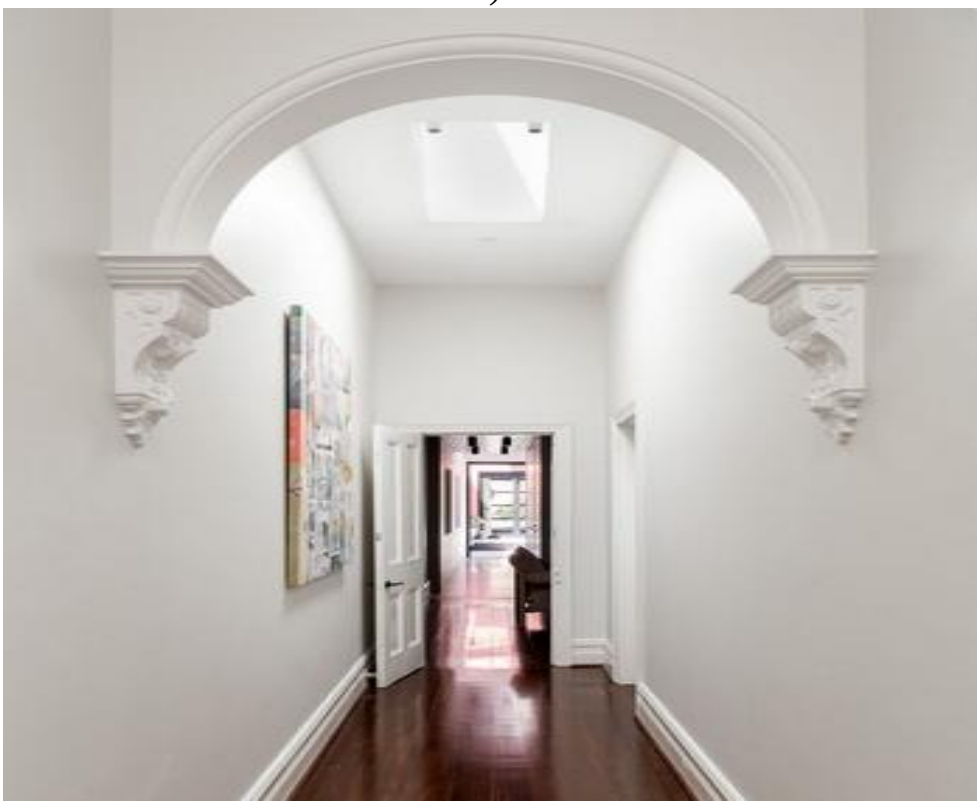
Finishing Construction Works L-lV

Based on October 2023, Curriculum Version 2



Module Title: Installing, Finishing Plasterboard and Fibre Cement Sheeting to Arches

Module Code: EIS FCW4 M 04 0322

Nominal Duration: 80 Hours

Prepared by: Ministry of Labor and Skill

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We would like to express our appreciation to the Ministry of Labor and Skills for their technical and financial support and workshop facilitation of this training module's development.

ACRONYMS

LAP Test	Learning Activity Performance Test
LG	Learning Guide
OSH	Occupational Safety and Health
PPE	Personal Protective Equipment
WHS	Work Health and Safety
SWMP	Site Waste Management Plan
OPC	Ordinary Portland Cement
FIG	Figure

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Ministry of Labor and Skills

Contents

INTRODUCTION TO THE MODULE

Plasterboard and Fibre Cement Sheeting to Archeshelps to WorksConcept plasterboard and fibre cement sheeting to arches, Prepare work area for installation processes,Install batt insulation,Fix plasterboard and fiber cement products to arches, Joint and finish materials.

In finishing construction work this module covers skill knowledge and attitude required to Plasterboard and Fibre Cement Sheeting to Archesin different back ground. This module is designed to meet the industry requirement under the Plasterboard and Fibre Cement Sheeting to Arches occupational standard, particularly for the unit of competency: Plasterboard and Fibre Cement Sheeting to Arches

MODULE UNITS

- Concept plasterboard and fibre cement sheeting to arches
- Prepare work area for installation processes
- Install batt insulation
- Fix plasterboard and fiber cement products to arches
- Joint and finish materials

LEARNING OBJECTIVES OF THE MODULE

At the end of this session, the students will able to:

- Understand Concept plasterboard and fibre cement sheeting to arches
- Prepare work area for installation processes
- Install batt insulation
- Fix plasterboard and fiber cement products to arches
- Joint and finish materials

MODULE LEARNING INSTRUCTIONS

Read the specific objectives of this learning guide (LG).

- Follow the instructions described below.
- Read the information written in the information sheet.
- Accomplishment the self-check questions.
- Accomplishment operation sheet (if any).
- Accomplishment learning activity performance (LAP) tests (if any).

Unit One: Concept plasterboard and fiber cement sheeting to arches

This unit to provide you the necessary information regarding the following content coverage and topics:

- Introduction plasterboard and fibre cement sheeting to arches
- Safety consideration
- Work Instructions
- Materials tools and equipment
- Materials quantity

Preservation of Fibrous Plaster This guide will also assist you to attain the learning outcomes stated in the Above topic contact. Specifically, upon completion of this learning guide, you will be able to:

- Introduction plasterboard and fibre cement sheeting to arches
- Safety consideration
- Work Instructions
- Materials tools and equipment
- Materials quantity

1.1 introductions to Plasterboard and fibre cement sheeting to arches

Plasterboard and fiber cement sheeting are two commonly used materials in construction, including for arches. The plaster board and fiber cement sheeting are the material commonly used for finishing work

Plasterboard, also known as drywall or gypsum board, is a widely used interior wall and ceiling covering material. It consists of a core made of gypsum plaster, sandwiched between layers of paper or fiberglass. Plasterboard is known for its ease of installation, affordability, and fire-resistant properties.

When it comes to arches, plasterboard can be used to create curved surfaces. This is achieved by cutting the plasterboard into narrow strips that can be easily flexed to match the desired curvature of the arch. These strips are then attached to a framework or support structure, such as metal studs or wooden ribs, using screws or adhesive. Once installed, the joints between the plasterboard strips are typically taped and covered with joint compound to create a seamless surface.

Fiber cement sheeting is a versatile building material made from a mixture of cement, cellulose fibers, and other additives. It is known for its durability, resistance to fire, moisture, and pests, as well as its dimensional stability. Fiber cement sheeting is commonly used for external cladding and as a substrate for tile in wet areas.

For arches, fiber cement sheeting can be used to create curved surfaces in a similar manner to plasterboard. The sheets can be cut into narrower strips or smaller panels to accommodate the desired arch shape. These strips or panels are then attached to a framework or support structure using appropriate fasteners, such as nails or screws. The joints between the fiber cement sheets are typically sealed with an appropriate sealant to ensure weatherproofing and a smooth appearance.

Both plasterboard and fiber cement sheeting offer advantages for arch construction. They can be easily shaped to form arches of various sizes and designs. Additionally, they provide a smooth surface that can be finished with paint, wallpaper, or other decorative treatments.

1.1.1 Importance of plasterboard and fibre cement sheeting to arches

1. **Flexibility and Versatility**: Plasterboard and fiber cement sheeting can be easily shaped and manipulated to form curved surfaces, making them ideal for creating arches. They can be cut into narrower strips or smaller panels, allowing for the desired curvature to be achieved. This flexibility enables architects and designers to create arches of various sizes and designs, offering creative architectural possibilities.

2. Structural Support: Plasterboard and fiber cement sheeting provide structural support to arches. When properly installed and attached to a framework or support structure, these materials contribute to the overall stability and strength of the arch. They help distribute the load and provide a solid base for the arch construction.

3. Ease of Installation: Plasterboard and fiber cement sheeting are relatively easy to install, especially when compared to other materials used for curved surfaces. They can be cut, shaped, and attached to the framework using standard construction techniques and tools. Their lightweight nature also simplifies handling and installation, reducing labor and time required for the construction process.

4. Surface Finish: Both plasterboard and fiber cement sheeting offer a smooth, ready-to-finish surface for arches. Once installed, they can be further treated with joint compound, tape, and other finishing materials to create a seamless and aesthetically pleasing surface. The finished arch can then be painted, wallpapered, or adorned with other decorative treatments to achieve the desired appearance.

5. Fire and Moisture Resistance: Plasterboard and fiber cement sheeting generally offer good fire-resistant properties. Gypsum-based plasterboard has inherent fire-resistant qualities, while fiber cement sheeting is non-combustible. Additionally, fiber cement sheeting is moisture-resistant, making it suitable for arches in areas prone to dampness or humidity, such as bathrooms or exterior applications.

6. Cost-Effectiveness: Plasterboard and fiber cement sheeting are cost-effective materials compared to some alternative options for curved surfaces. They are readily available and generally more affordable than specialized materials like composites or custom-fabricated solutions.

1.1.2. Type of plasterboard and fibre cement sheeting to arches

Types of plasterboard and fiber cement sheeting commonly used for arches, along with their specific uses:

1. Plasterboard

- **Regular Plasterboard**: This is the standard plasterboard commonly used for interior walls and ceilings. It is suitable for arches where fire resistance or moisture resistance is not a primary concern. Regular plasterboard can be used for arches in dry areas, such as living rooms or bedrooms.

Fig 1.1 Regular Plasterboard:

- **Fire-Resistant Plasterboard**: Fire-resistant plasterboard, also known as Type X or Type C plasterboard, contains additives that enhance its fire resistance properties. It is used for arches in areas where fire safety is crucial, such as stairwells, corridors, or commercial buildings

Fig 1.2 Fire-Resistant Plasterboard

- **Moisture-Resistant Plasterboard**: Moisture-resistant plasterboard, also called green board or blue board, has special additives that make it resistant to moisture and mold growth. It is suitable for arches in wet areas like bathrooms, kitchens, or laundry rooms.

2. Fiber Cement Sheeting

- **Standard Fiber Cement Sheeting**: Standard fiber cement sheets are commonly used for external cladding and as a substrate for tile in wet areas. They offer good durability and weather resistance. However, for arches, they are typically not the primary choice due to their limited flexibility when compared to other materials.

1.3 Fiber cement sheeting

- **Flexible Fiber Cement Sheeting**: Flexible fiber cement sheets are specifically designed for creating curved surfaces, including arches. These sheets are more pliable and can be easily shaped to match the desired curvature of the arch. They are typically used for arches that require greater flexibility and are available in various thicknesses to accommodate different arch sizes.

1.2 Safety consideration

When considering safety measures for plasterboard and fiber cement sheeting installation on arches, there are several key points to keep in mind. Here's a note outlining the safety considerations for this process:

1**. Personal Protective Equipment (PPE):** Ensure that appropriate PPE is worn during the installation process. This may include safety glasses, gloves, dust masks, and protective clothing. PPE will help protect against potential hazards such as dust, sharp edges, and falling debris.

2. Structural Assessment: Before installing plasterboard or fiber cement sheeting, assess the structural integrity of the arches. Ensure that the arches are stable, capable of supporting the additional weight of the materials, and free from any signs of damage or deterioration.

3. **Proper Handling and Lifting Techniques**: Plasterboard and fiber cement sheeting can be heavy and awkward to maneuver. Use proper lifting techniques to prevent strains or injuries. Consider using mechanical lifting aids or seeking assistance from others when necessary.

4. **Secure Attachment:** Securely fix the plasterboard or fiber cement sheeting to the arches using appropriate fasteners. Follow the manufacturer's guidelines for recommended fixing methods and spacing. Ensure that the fasteners are suitable for the substrate and provide sufficient strength to hold the materials securely in place.

5. Cutting and Trimming: When cutting or trimming the plasterboard or fiber cement sheeting, take precautions to minimize the generation of dust. Use appropriate tools with dust collection systems if available. Wear a dust mask and eye protection to prevent inhalation or eye irritation.

6. Electrical and Plumbing Considerations: If the arches contain electrical wiring or plumbing, exercise caution to avoid damaging these systems during the installation process. Identify the location of any utilities beforehand and take measures to protect them or reroute them if necessary.

7. Fire Safety: Consider the fire safety properties of the materials being installed. Ensure that the plasterboard or fiber cement sheeting used complies with relevant fire safety standards and regulations. Pay attention to fire-rated systems and install fire-resistant barriers or insulation where required.

8. Work Area Safety: Maintain a clean and organized work area during the installation process. Remove any tripping hazards and ensure proper lighting for visibility. Keep tools and equipment in a secure location when not in use to prevent accidents.

9. Follow Industry Standards and Guidelines: Adhere to local building codes, regulations, and industry best practices when installing plasterboard or fiber cement sheeting to arches. Familiarize yourself with the manufacturer's installation instructions and recommendations.

10. Professional Assistance: If you are unsure about any aspect of the installation process or feel uncomfortable performing the task yourself, consider seeking professional assistance from a qualified contractor or tradesperson.

Personal Protective Equipment (PPE)

Figure 1.4 Personal Protective Equipment

1.3 Work instruction

Work Instructions for Plasterboard and Fiber Cement Sheeting to Arches

1.3.1. Planning:

- Review the architectural plans and specifications to understand the scope of work.
- Determine the quantity of plasterboard and fiber cement sheeting required based on the dimensions of the arches.
- Assess the structural integrity of the arches to ensure they can support the additional weight of the materials.
- Identify any electrical or plumbing systems within the arches and plan accordingly to avoid damage.

1.3.2. Specification:

- Select the appropriate type and thickness of plasterboard or fiber cement sheeting based on the project requirements and local building codes.
- Ensure that the chosen materials comply with relevant fire safety standards if required.
- Verify the dimensions and dimensions of the arches to accurately cut the plasterboard or fiber cement sheeting.

1.3.3. Quality Requirement:

Inspect the plasterboard and fiber cement sheeting for any visible defects or damage before installation.

- Verify that the materials meet the specified quality standards and are free from warping, cracks, or other manufacturing issues.
- Check that the plasterboard or fiber cement sheeting has the necessary fire resistance or other desired properties as specified.

Note: The work instructions provided above are general guidelines. It's essential to refer to the specific manufacturer's instructions and comply with local building regulations and requirements.

1.4. Tools and equipment

Suitably designed tools are essential for high-quality workmanship. Using the right tools for specific jobs can improve efficiency and reduce labor costs. This chapter contains an extensive sampling of tools designed to meet the needs of acoustical, drywall and plaster contractors. Some of the more commonly used hand tools can be found at building material dealers, hardware stores and home centers.

Spirit Level: Ensures that steel framing members are level and plumb.

FIG: 1.5. ***Spirit Level***

Chalk Line: A device that holds retractable chalk line and chalk. Also used as plumb bob.

FIG1.6 . *Chalk Line*

String Line: Strong nylon string that is stretched taut between two distant points, such as midpoints on ceiling grid wall angles, so that additional components can be aligned to the same level plane.

Water Level: Useful for ceiling grid installation. Water in transparent hose will be level at two distant points

FIG1.7 *Water Level*

Laser Alignment Tool: Utilizes a visible laser beam for all construction alignment jobs. Provides maximum accuracy and speed for laying out partitions and leveling suspended ceiling grids.

FIG1.8*Laser Alignment Tool*

Circular Saw: Cuts wood and steel studs, runners and joists of various gauges with appropriate abrasive metal-cutting blade. Hand held and portable, it ensures easy on-site cutting and trimming. Use a carbide-tipped blade for cutting cement board and gypsum panels.

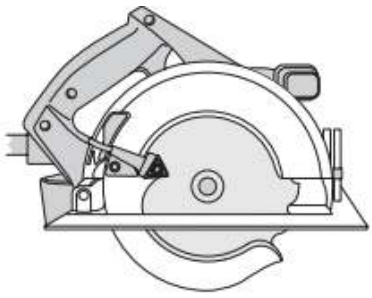


FIG: 1.9. *Circular Saw*

Chop Saw: Cuts wood and steel framing members with an abrasive metal blade. Its steel base can be placed on a bench, saw horse or floor for fast and efficient gang cutting of members.

FIG1.11 . *Chop Saw*

Band Saw: Use in cutting wood and steel framing members; a variety of models are available.

Cut-Off Saw: Uses an abrasive blade and provides more power than a circular saw. Gas-powered models available

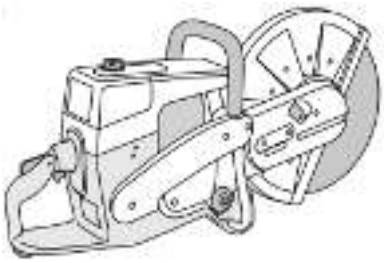


FIG1.12. *Cut-Off Saw*

Power Fastener Driver: Drives fasteners into concrete or steel for attachment of framing members. Powder-driven model shown. Also available in air-driven models

FIG:1.13 . *Power Fastener Driver*

Lather Nippers: Used in wire-tie attachment of metal lath, ceiling grid and framing components.

FIG: 1.15 . *Lather Nippers*

Metal Snips: Used to cut steel framing components and trims. Several sizes and styles available, including those that make curved cuts

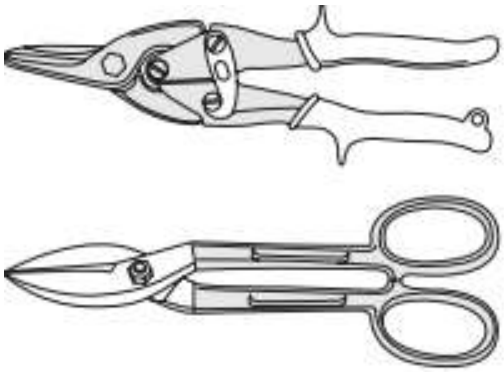


FIG: 1.16 . *Metal Snips*

Lineman Pliers: Square-nosed pliers with flat jaws and integral wire cutter. Flat jaws are used for joining wires, such as suspension ceiling tie wires, together by twisting; cutter is used for quickly removing excess.

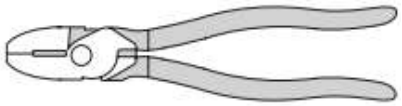


FIG: 1.17*Lineman Pliers*

Locking Pliers/Clamps: Holds steel framing and acoustical grid members in place during screw attachment. Adjustable lock mechanism in the grip ensures that clamps hold securely.

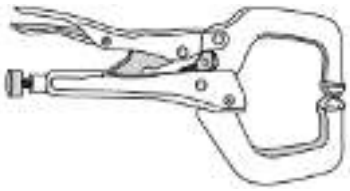


FIG:1.18 . *Locking Pliers/Clamps*

Spring Clamps: Faster and easier to use than locking clamps and excellent for light-duty applications.

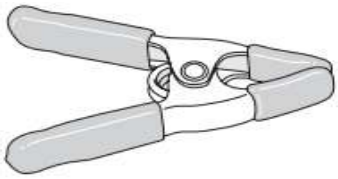


FIG: 1.19. *Spring Clamps*

Acoustical Punch Pliers: Used for punching holes in acoustical ceiling grid main tees for hanger wire attachment or in wall angle to be secured by pop rivets.

FIG:1.20 *Acoustical Punch Pliers*

Pop Rivet Tool: Used to flare and secure pop rivets through prepared holes. Useful for securing wall angle to acoustical ceiling grid.

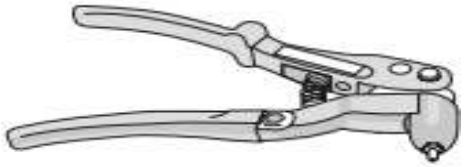


FIG:1.21 . *Pop Rivet Tool*

Serrated Knife: Makes cutting insulation easy

FIG: 1.22. Serrated Knife

1.4.1 Board and lath application tools

Steel Tape Rule: Retractable steel tape measure is essential for accurate measurements in preparation for cutting and attaching board.

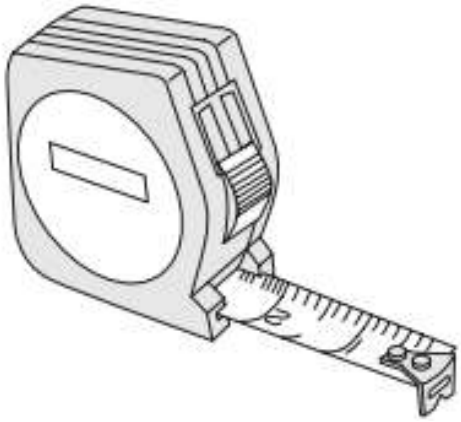


FIG: 1.23. Steel Tape Rule

T-Square: it is indispensable for making accurate cuts across the narrow dimension of board products.

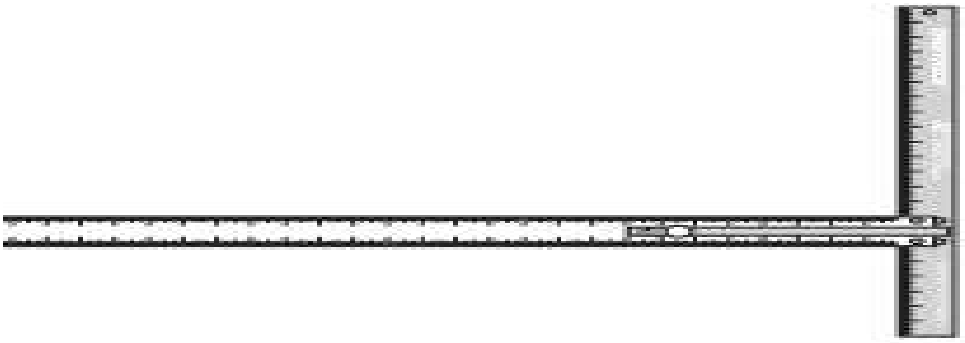


FIG:1.24 . *T-Square*

Utility Knife: The standard knife for cutting board products. Uses replaceable blade; extra blades store in handle

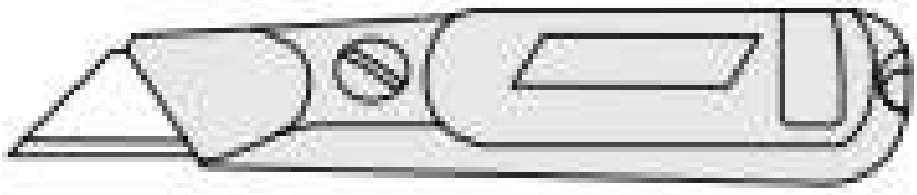
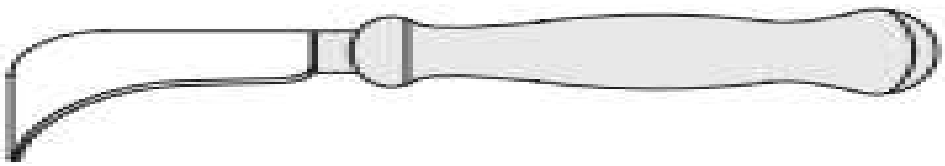


FIG:1.25 . *Utility Knife*

Hook-Bill Knife: Useful for trimming gypsum boards and for odd-shaped cuts. (Also known as



linoleum knife.) Carbide-tipped version useful for scoring Durock brand cement board.

FIG:1.26 . *Hook-Bill Knife*

Drywall Saw: Used for cutting gypsum boards quickly and easily. Has short blade and coarse teeth.

FIG:1.27 . *Drywall Saw*

Circle Cutter: Used to cut arcs and circles in gypsum board. Calibrated steel shaft allows accurate cuts up to 40cm diameter

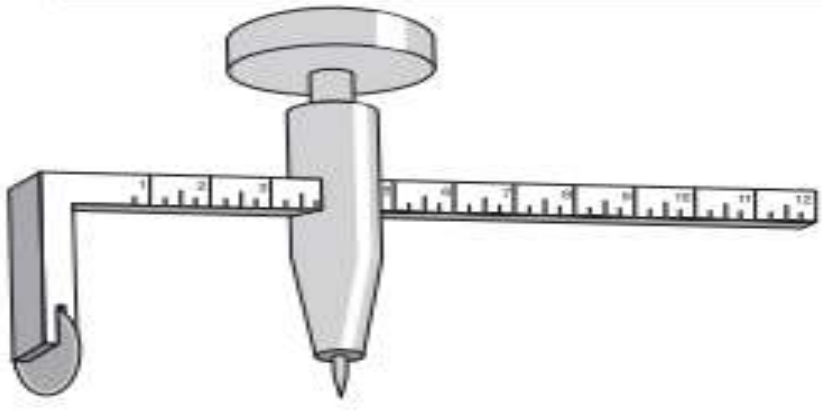


FIG: 1.28. *Circle Cutter*

Electric Router: Used for cutting openings in gypsum panels for electrical boxes, heating ducts and other passageways. Specialty bits are used for cutting cement board or fiber-reinforced gypsum panels

FIG:1.29. *Electric Router*

Tack Claw: A screwdriver with claw head attached that can be used to remove misapplied fasteners

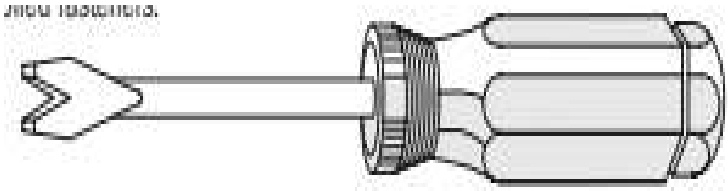


FIG:1.30 *Tack Claw*

Rasp: Smoothes rough-cut edges of gypsum boards quickly and efficiently. Manufactured model features replaceable blade and clean-cut slot to prevent clogging. Job-made model at right consists of metal lath stapled to a wood block

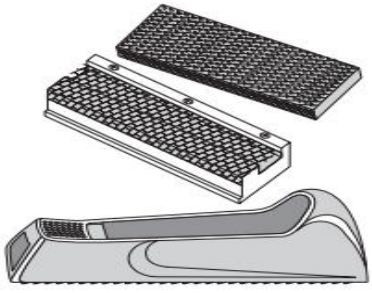


FIG: 1.31. *Rasp*

Panel Lift: Lifts and holds drywall onto ceilings and sidewalls with rollers for easy movement.

FIG:1.32. *Panel Lift*

Drywall Hammer: Waffle-patterned convex face designed to compress gypsum panel face and leave desired dimple

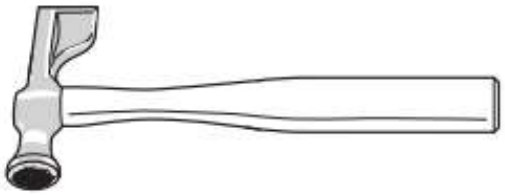


FIG:1.33 . *Drywall Hammer*

Electric Screw Gun: Drives drywall screws in gypsum board attachment. Special chuck and tip control screw depth to ensure that screw is set at desired depth. Also used for steel-stud framing and acoustical ceilings.

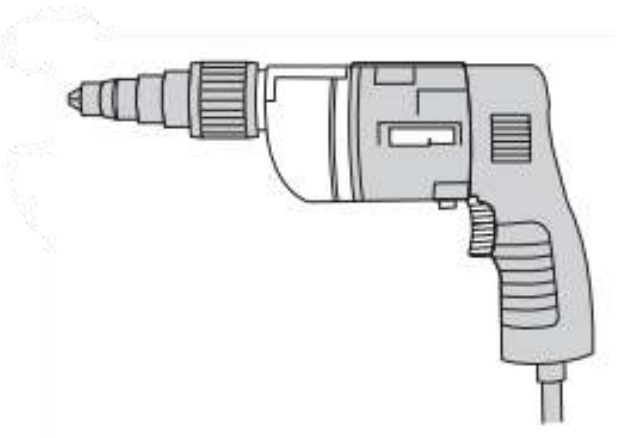


FIG:1.34 . *Electric Screw Gun*

Cordless Drill: Operates with power from battery pack that can be readily recharged

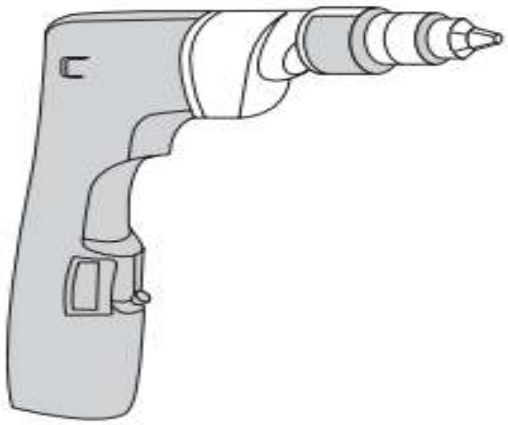


FIG:1.35 . *Cordless Drill*

1.4.2 Caulking equipment

Cartridge-Type Caulking Gun: Aids uniform application of adhesive. Hand-operated apparatus uses 29-oz. cartridges. Size of caulk bead determined by cut of cartridge nozzle. Smaller version uses 10-oz. cartridges.

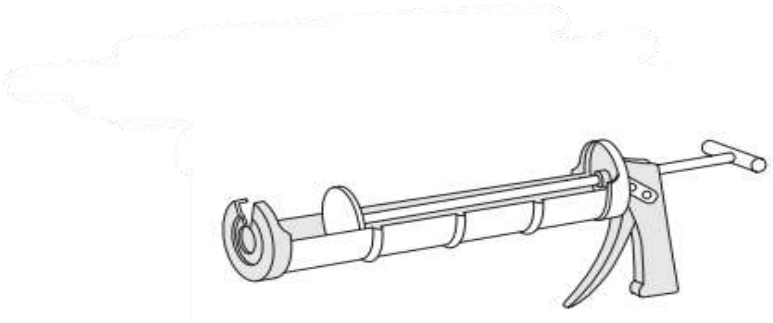


FIG:1.36. *Cartridge-Type Caulking Gun*

Bead Bulk-Type Caulking Gun: Used for high-volume applications. Cylinder is reloaded from bulk container of adhesive. Trigger mechanism withstands rough usage and offers minimum resistance to large bulk load of adhesive. Gun has 1-qt. capacity

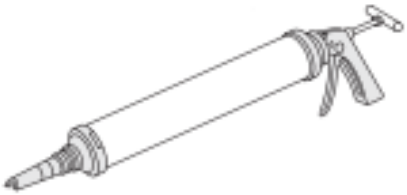


FIG:1.37 . *Bead Bulk-Type Caulking Gun*

Loader Pump: Pump clamps on 5-gal. container to mechanically load bulk-type adhesive hand guns.

FIG:1.38 . *Loader Pump*

Pail Extruder: Used for high-volume extrusion of adhesives from pails.

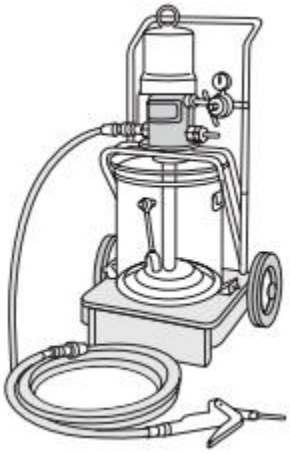


FIG:1.39 . *Pail Extruder*

1.4.3 Mixing equipment

Hand Mixer: Used for hand mixing joint compounds. Available in several styles. Model with rounded edge is especially effective for scraping material from sides of mixing bucket.

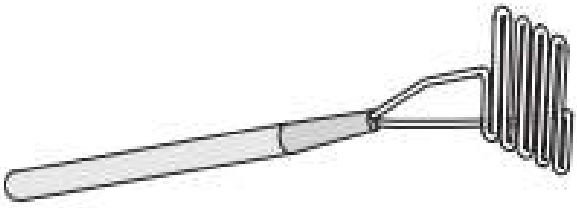


FIG:1.40 . *Hand Mixer*

Heavy-Duty Drill: Use a 1/2″ heavy-duty electric drill operating at a speed of 450–650 rpm for joint compound, 300–600 rpm for textures. Use a 1/2″ electric drill with a no-load rating of 900–1,000 rpm for mixing veneer plasters

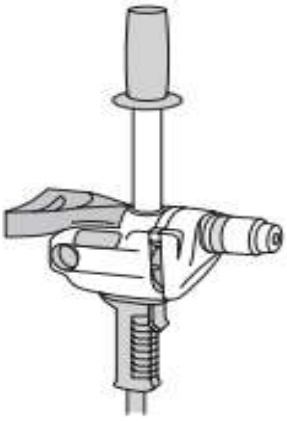


FIG:1.41 . *Heavy-Duty Drill*

Veneer Plaster Mixer: Recommended as the mixer for USG veneer plaster fi nishes, this cage-type paddle provides high-shear action necessary for proper dispersion of plaster ingredients in mixing water and to develop high plasticity in the mix

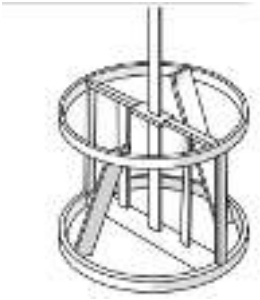


FIG:1.42 . *Veneer Plaster Mixer*

Plaster board finishing tools

Taping Knives: taping knives designed for taping, fastener spotting, angle taping and finishing.

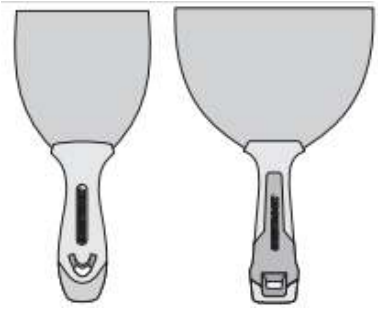


FIG:2.36. *Taping Knives*

Finishing Knives: 8″ or wider knives designed for finish coating. Drywall finishing knives are available with blade widths from 1″ up to 24″. Offset-handle and long-handle models also available.

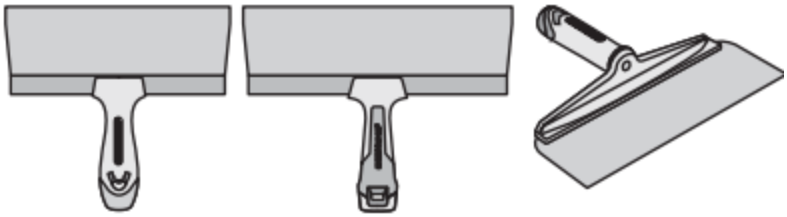


FIG:1.43. *Finishing Knives*

Mud Pan: Used to carry joint compound. Shaped like a bread pan. Edge of the pan is used for blade cleaning. Available in a wide range of sizes and material composition.

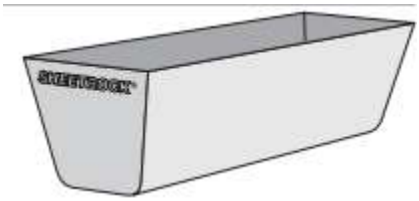


FIG:1.45 . *Mud Pan*

Banjo: Draws paper tape through a compartment filled with joint compound so that both materials are simultaneously applied to joints.

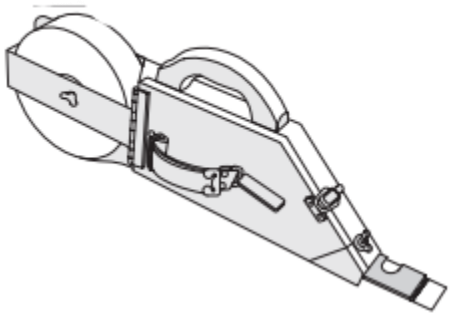


FIG:1.46 . *Banjo*

Hand Sander: Sandpaper attached with end clamps to the base plate. Models include those with wood or aluminum handles.

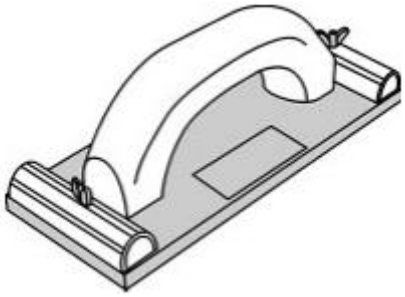


FIG1.47 . *Hand Sander*

Pole Sander: Enables working large areas with longer strokes and reach.

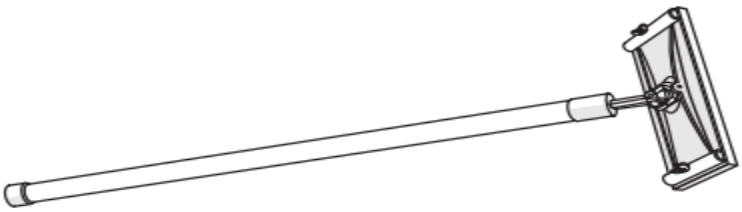


FIG:1.48. *Pole Sander*

Vacuum Power Sander: Used for fast and easy sanding of large areas. Vacuum dramatically reduces the number of airborne particles.

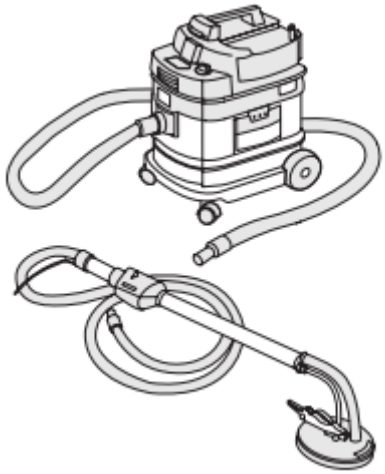


FIG:1.49 . *Vacuum Power Sander*

1.4.5 Mechanical taping

Automatic Taper: Applies a metered amount of compound onto the tape, places the tape on the wall and cuts the tape to length. works for flat joints and corners.

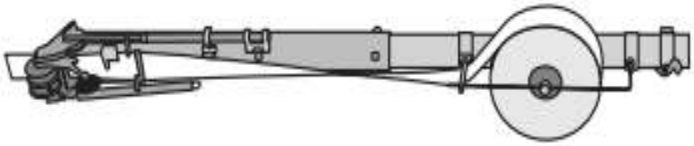


FIG 1.50 . *Automatic Taper*

Corner Roller: Used to embed tape in corner and force excess compound from under tape prior to using the corner applicator head

FIG:1.51 . *Corner Roller*

1.4.6 Veneer Plaster

Steel float: Available in several styles and in lengths from 10″ to 16″. Trowels are the standard tools for veneer plaster and conventional plaster work. Also used by drywall finishers.

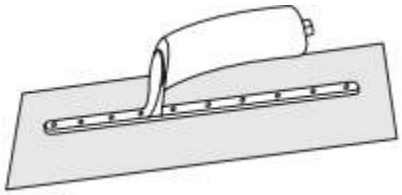


FIG:1.52 . *Steel float*

Margin Trowel: A narrow trowel used to touch up small areas and for cleaning tools and equipment.

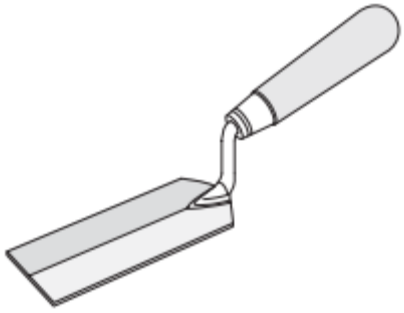


FIG:1.53 . *Margin Trowel*

Pointer Trowel: Pointed trowel enabling finishing of sharp angles.

FIG:1.54. *Pointer Trowel*

Angle Trowel: For interior corner finishing of veneer plaster and drywall jobs

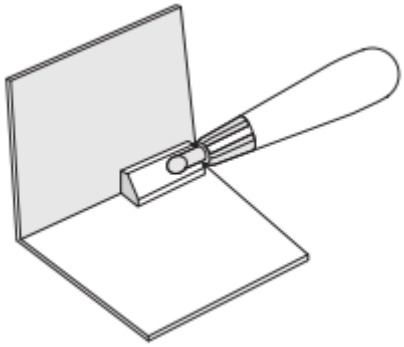


FIG:1.55. *Angle Trowel*

Browning Rod: Used for leveling base coats of plaster, across grounds or screeds. Also known as a straight edge.

FIG:1.56. *Browning Rod*

Float: Used for leveling and straightening finish coat or to correct surface irregularities. Also used to produce a sand-finish effect on plaster surfaces. Floats typically are faced with hard rubber (shown) but may also be made of sponge rubber, cork, felt or carpet.

FIG:1.57. *Float*

Blister Brush: Used to keep the plaster finish wet while finish toweling. This felt-pad brush can also be used for wet sanding joint compound

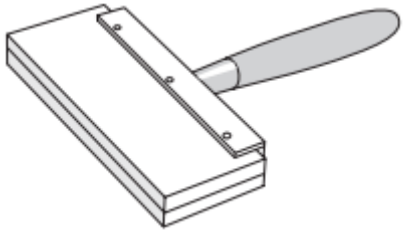


FIG:1.58. *Blister Brush*

Scrub Brush: Used for cleanup. Residue on tools or containers will affect performance of material.

FIG:1.59 . *Scrub Brush*

1.4.7 Hand texture equipment

Stucco Brush: Used to create a variety of textures from stipple to swirl to splash dash.

FIG:1.60 . *Stucco Brush*

Texture Brush: Tandem-mounted brushes cover large area to speed texturing job. The texture brush may be attached to a pole for greater reach. Available in many sizes and styles.

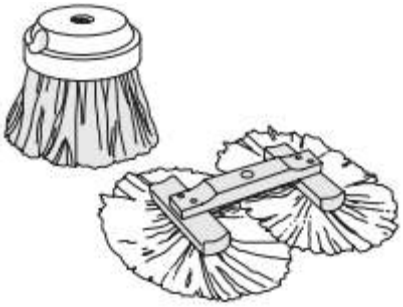


FIG:1.61 . *Texture Brush*

Wipe down Blade: Used for cleaning of walls after application of ceiling texture. Straight wipe down blade is also used to knock down splatters to produce splatter-knockdown surface texture

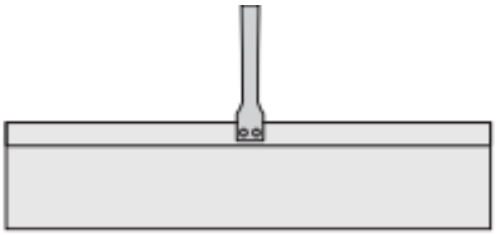


FIG:1.62 . *Wipe down Blade*

1.4.8 Coatingsprayequipmen

Airless Spray Equipment: Specifically designed airless spray pumps deliver paint, joint compound and specialty caulks fast and efficiently. The material is pumped at high pressure with a single piston pump through a high-pressure hose. The high pressure atomizes the material as it leaves the spray tip without the aid of additional air pressure

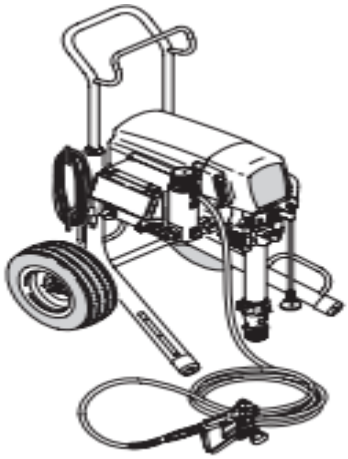


FIG:1.63 . *Airless Spray Equipment*

1.4.9 Hoses, guns and

Hoses: Used to carry material from pump to nozzle. Hoses vary in type and generally have a diameter of 3/4″ to 1″.

Pole Guns: Used with any universal spray machine as well as largest of drywall texture machines described earlier in this section. Their length allows any operator to spray moderately high ceilings without scaffolding or stilts. Model shown has electric start-stop control. Also available with air start-stop control

FIG:1.64 . *Pole Guns*

Texture Guns: Professional-type equipment for specific texture applications. Each gun is designed for specific product applications.

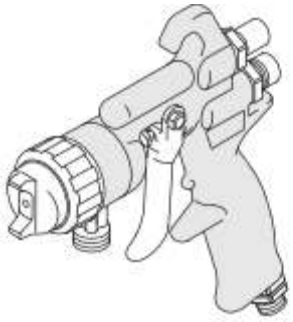


FIG1.65. *Texture Guns*

1.4.9 Miscellaneous equipment

Gypsum Board Dolly: Used for efficient transport of gypsum boards around the floors of a building. The load, centered over large side wheels, is easily steered and moved by one worker

FIG:1.66. *Gypsum Board Dolly*

Folding Trestle Horse: Top surface provides work surface or stand-on work platform. Legs adjust in increments.

FIG:1.67. *Folding Trestle Horse*

Scaffold: Portable and easy to set up. Wheels lock for safety and security. Wide variety of sizes and types of scaffolds are available to meet job requirements.

FIG:1.68 . *Scaffold*

Self check

Part one: multiple choices

1. Which of the following materials is commonly used for finishing work in construction, including arches?

a.) Plasterboard
b) Brick
c) Metal panels
d) Concrete blocks

2. What is the primary advantage of using plasterboard and fiber cement sheeting for arch construction?

a) High cost-effectiveness
b) Exceptional durability
c) Easy installation and shaping
d) Superior fire resistance

3. Which type of plasterboard is suitable for arches in wet areas like bathrooms or kitchens?

a) Regular plasterboard
b) Fire-resistant plasterboard
c) Moisture-resistant plasterboard
d) Standard fiber cement sheeting

Part two: True or False

1. Plasterboard and fiber cement sheeting can be easily shaped to form curved surfaces for arches.

2. Both plasterboard and fiber cement sheeting provide structural support to arches. (True/False)

3. Fire-resistant plasterboard is commonly used for arches in areas where fire safety is crucial.

Part three: short answer

1. What are two advantages of using plasterboard and fiber cement sheeting for arch construction?

2. What type of plasterboard is suitable for arches in dry areas where fire resistance or moisture resistance is not a primary concern?

3. What type of fiber cement sheeting is specifically designed for creating curved surfaces, including arches?

Unit two: Prepare work area for installation processes

This unit to provide you the necessary information regarding the following content coverage and topics:

- Work area and substrate
- Timber/steel wall frame Installation
- checking Timber/steel wall framing
- Selection of thermal and acoustic batt insulation

Preservation of Fibrous Plaster This guide will also assist you to attain the learning outcomes stated in the Above topic contact. Specifically, upon completion of this learning guide, you will be able to:

- Work area and substrate
- Timber/steel wall frame Installation
- checking Timber/steel wall framing
- Selection of thermal and acoustic batt insulation

2.1. Work area and substrate

To prepare the work area and substrate surface for plasterboard and fiber cement sheeting on an arch, follow these steps

1. **Clear the Work Area**: Remove any furniture, objects, or debris from the immediate work area around the arch. Create sufficient space to maneuver and access the arch comfortably.
2. **Protect Surrounding Surfaces:** Cover adjacent surfaces, such as floors or walls, with drop cloths or plastic sheets to prevent damage or soiling. Use painter's tape to secure the protective covering and ensure it stays in place during the installation process.
3. **Assess the Substrate Surface:** Inspect the arch's surface for any irregularities, damages, or loose materials. Repair or rectify any defects, such as cracks or holes, using suitable patching compounds or fillers. Ensure the substrate surface is clean, dry, and free from dust or contaminants that may affect adhesion.
4. **Sand or Smooth the Substrate:** If the substrate surface is rough or uneven, lightly sand it to create a smoother base for the plasterboard or fiber cement sheeting. Use sandpaper or a sanding block to remove any protrusions, bumps, or sharp edges that could affect the installation.
5. **Apply a Primer (if necessary):** Depending on the substrate material and condition, it may be beneficial to apply a primer before fixing the plasterboard or fiber cement sheeting. Consult the manufacturer's recommendations to determine if a primer is required and follow the application instructions accordingly.
6. **Determine the Layout and Positioning:** Plan the layout and positioning of the plasterboard or fiber cement sheets on the arch. Consider factors such as the arch's curvature, sheet dimensions, and any architectural features that may affect the installation.

7. **Mark Reference Lines (if necessary):**Use a level, plumb line, or laser level to mark reference lines on the substrate surface, indicating the desired position of the plasterboard or fiber cement sheets. These lines will serve as guides during the installation process, ensuring accurate and aligned placement.

8. **Gather Tools and Materials**: Prepare all the necessary tools and materials for the installation, including adhesive, mechanical fasteners (if applicable), cutting tools, measuring tape, and safety equipment.

9. **Ensure Adequate Ventilation**: If working in an enclosed or poorly ventilated area, ensure proper ventilation by opening windows or using fans to promote airflow and dissipate fumes from adhesives or primers.

10. **Follow Safety Guidelines:** Adhere to safety guidelines, such as wearing appropriate personal protective equipment (PPE), including safety glasses, gloves, and dust masks. Use tools and equipment in a safe and responsible manner, following manufacturer instructions and best practices.

2.2. Timber/steel wall frame Installation

When installing gypsum plasterboard on timber or steel wall frames, there are specific steps to follow. Here's a general guide for both steel and timber frame installations:

a) Steel Frame Installation

1. Prepare the Wall Frame

- Ensure that the steel wall frame is correctly aligned and securely fixed in place.
- Check that the frame is straight, plumb, and level using a spirit level.

2. Install Studs and Tracks

- Attach the vertical steel studs to the top and bottom tracks using appropriate screws or fasteners.
- Ensure that the spacing between the studs complies with the manufacturer's specifications and local building codes.

3. Install Noggings

- Install horizontal noggings between the studs at appropriate intervals to provide additional support and prevent sagging of the plasterboard.
- Secure the noggings to the studs using screws or fasteners.

4. Apply Insulation (if required):

- Install insulation material within the wall cavities as per the project requirements and local building regulations.

5. Fix Gypsum Plasterboard

- Measure and cut the gypsum plasterboard sheets to fit the wall height, ensuring a small gap at the top and bottom for expansion.
- Position the plasterboard sheets vertically, starting from one corner of the wall.
- Secure the plasterboard to the steel studs using self-drilling screws designed for steel framing.
- Place screws approximately every 200-250mm along the vertical edges and 300-400mm along the horizontal edges of the plasterboard.

6. Repeat for Other Sheets

- Continue installing additional plasterboard sheets, ensuring they are tightly butted together with no visible gaps.
- Stagger the joints between the sheets to enhance structural integrity.

7. Finish the Wall

- Apply joint compound to the joints and screw indentations, embedding joint tape as necessary.

- Smooth out the joint compound with a trowel and allow it to dry.
- Sand the dried compound to achieve a smooth and even surface ready for painting or finishing.

Fig 2.1. Steel frame

b) Timber Frame Installation

The process for installing gypsum plasterboard on timber frames is similar to steel frame installation, with a few variations:

1. Prepare the Wall Frame

- Ensure that the timber wall frame is correctly aligned and securely fixed in place.
- Check that the frame is straight, plumb, and level using a spirit level.

2. Install Studs, Plates, and Noggings

- Attach the vertical timber studs to the top and bottom plates using appropriate nails or screws.
- Install horizontal noggings between the studs at appropriate intervals for additional support.

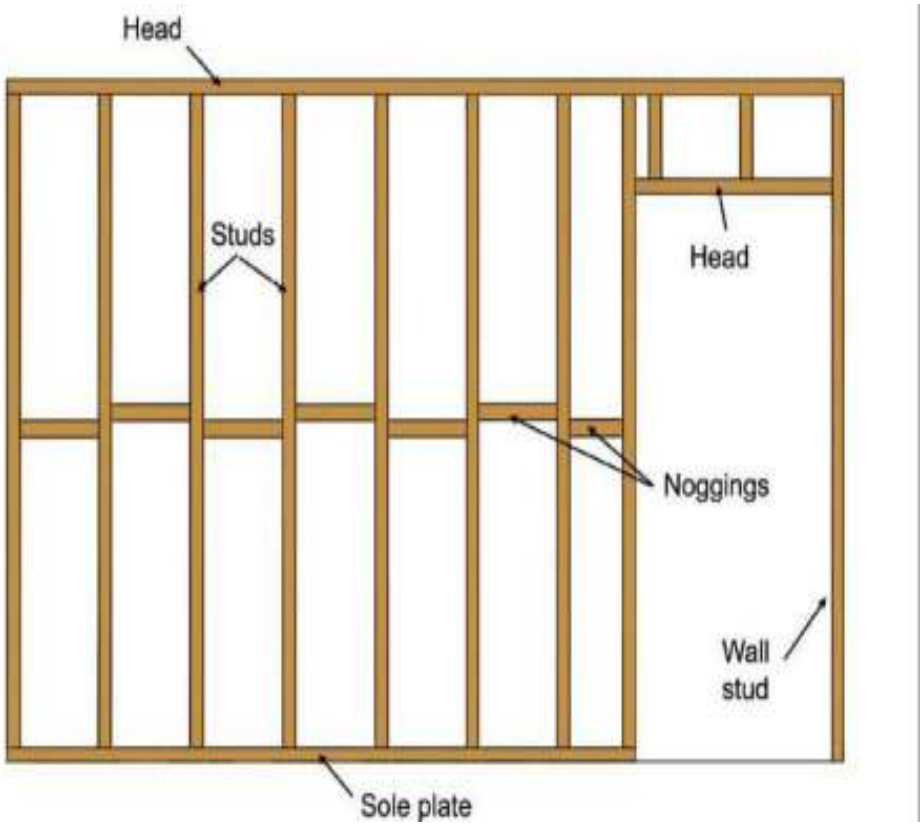


Fig 2.2 Install horizontal noggings and studs

3. Apply Insulation (if required)

- Install insulation material within the wall cavities as per the project requirements and local building regulations.

4. Fix Gypsum Plasterboard

- Measure and cut the gypsum plasterboard sheets to fit the wall height, leaving a small gap at the top and bottom for expansion.
- Position the plasterboard sheets vertically, starting from one corner of the wall.
- Secure the plasterboard to the timber studs using appropriate nails or screws designed for timber framing.
- Place fasteners approximately every 200-250mm along the vertical edges and 300-400mm along the horizontal edges of the plasterboard.

5. Repeat for Other Sheets

- Continue installing additional plasterboard sheets, ensuring they are tightly butted together with no visible gaps.

- Stagger the joints between the sheets to enhance structural integrity

6. Finish the Wall

- Apply joint compound to the joints and screw indentations, embedding joint tape as necessary.
- Smooth out the joint compound with a trowel and allow it to dry.
- Sand the dried compound to achieve a smooth and even surface ready for painting or finishing.

Note: The instructions provided above are general guidelines. Always refer to the specific manufacturer's instructions and adhere to local building codes and regulations. Additionally, consider consulting with a professional contractor or tradesperson for expert advice and guidance specific to your project.

Fig 2.3 Arch timber frame

2.3. Checking Timber/steel wall framing

When checking the timber or steel wall framing for plasterboard and fiber cement sheeting installation on arches, it's important to assess the straightness and plumb of the framing. Here's how you can check these aspects:

a. Straightness:

To check the straightness of the wall framing:

- Use a straightedge or a long, rigid object like a level or a laser level.

- Place the straightedge vertically against the surface of the framing, such as a stud or a track.
- Check for any gaps or deviations between the straightedge and the framing surface.
- Move the straightedge along the length of the framing, checking for consistent contact and minimal gaps or deviations.
- Repeat the process for other sections of the framing, including studs, tracks, and noggings.

If you notice any significant gaps or deviations from straightness, it may indicate issues with the framing. Address any concerns before proceeding with the installation to ensure a stable and even surface for the plasterboard or fiber cement sheeting.

b. Plumb:

To check the plumb of the wall framing:

- Use a plumb bob or a level with a vertical bubble indicator.
- Position the plumb bob or the level against the framing member, such as a stud or a track.
- Observe the alignment of the plumb bob string or the bubble indicator.
- Ensure that the plumb bob or the bubble is centered and vertical.
- Repeat the process for other sections of the framing, including studs, tracks, and noggings.

If you notice any significant deviations from plumb, it may affect the overall alignment and stability of the arches. Adjust the framing as necessary to achieve proper plumb before proceeding with the plasterboard or fiber cement sheeting installation.

Checking the straightness and plumb of the timber or steel wall framing ensures that the arches provide a stable and even surface for the installation of plasterboard or fiber cement sheeting. It helps ensure the integrity and quality of the finished installation.

2.4. Selection of thermal and acoustic batt insulation

When selecting thermal and acoustic batt insulation for walls and ceilings, there are several factors to consider. Here's a guide for each:

a. Walls

1. Thermal Performance: Determine the desired level of thermal insulation for the walls based on the climate zone and local energy efficiency requirements. Consider factors such as R-value (thermal resistance) to assess the insulation's effectiveness in reducing heat transfer.

2. Acoustic Performance: Evaluate the acoustic properties of the insulation material to address sound transmission through the walls. Look for insulation with good sound absorption qualities, such as high NRC (Noise Reduction Coefficient) ratings.

3. Moisture Resistance: Choose insulation materials that have good moisture resistance properties to prevent moisture buildup within the wall cavity. This can help mitigate the risk of mold or mildew growth and maintain the integrity of the insulation.

4. Fire Safety: Consider the fire performance of the insulation. Look for materials that are fire-resistant or have a high fire rating to improve the overall fire safety of the walls.

5. Installation Convenience: Evaluate the ease of installation. Consider the dimensions and flexibility of the insulation batts, as well as compatibility with the wall framing system, to ensure efficient and effective installation.

b. Ceilings

1. Thermal Performance: Determine the desired level of thermal insulation for the ceilings based on the climate zone and local energy efficiency requirements. Consider the R-value to ensure effective insulation against heat transfer between the living space and the attic or roof.

2. Acoustic Performance: Assess the acoustic properties of the insulation material to minimize sound transmission between floors. Look for insulation with good sound absorption capabilities, such as high NRC ratings.

3. Vapor Barrier: Evaluate the need for a vapor barrier in ceiling insulation, especially in areas prone to moisture buildup. A vapor barrier can help prevent condensation and moisture-related issues within the ceiling assembly.

4. Fire Safety: Consider the fire performance of the insulation material. Opt for insulation with high fire resistance or fire-rated properties to enhance overall fire safety in the ceiling.

5. Accessibility: Consider the accessibility of the ceiling cavity. If the cavity is difficult to access, choose insulation batts that are easily handled and maneuvered for efficient installation.

6. Compressive Strength: If the ceiling insulation may be subjected to weight or foot traffic, ensure that the selected insulation has adequate compressive strength to withstand the load without compromising its thermal and acoustic properties.

It's important to consult local building codes, regulations, and energy efficiency guidelines to ensure compliance with specific requirements for thermal and acoustic insulation in walls and ceilings. Additionally, consider consulting with insulation manufacturers or professionals for tailored recommendations based on your specific project needs.

Self check

Part one: Multiple Choices

1. What should be done to protect adjacent surfaces during the installation process?
   a) Apply a primer
   b) Assess the substrate surface
   c) Cover with drop cloths or plastic sheets

2. Which tool is typically used to mark reference lines on the substrate surface?

a) Measuring tape

b) Level

c) Sanding block

3. What should be done to the joints and screw indentations after fixing the plasterboard sheets to the steel studs?

a) Apply joint compound and embed joint tape

b) Sand the dried compound

c) Apply a primer

Part two: true or false

1. When preparing the work area for plasterboard and fiber cement sheeting on an arch, it is important to clear the immediate work area by removing furniture and debris.

2. Sanding the substrate surface is necessary if it is rough or uneven before installing plasterboard or fiber cement sheeting.

3. When installing gypsum plasterboard on timber or steel wall frames, it is important to check that the frame is straight, plumb, and level using a spirit level.

Unit three: three :Install batt insulation

This unit to provide you the necessary information regarding the following content coverage and topics:

- Introduction to Batt Insulation
- Types of Batt Insulation
- Installation Process

Preservation of Fibrous Plaster This guide will also assist you to attain the learning outcomes stated in the Above topic contact. Specifically, upon completion of this learning guide, you will be able to:

- Introduce to Batt Insulation
- Identify Types of Batt Insulation
- Apply Installation Process

3.1. Introduction to Batt Insulation

3.1.1. Definition and Overview of Batt Insulation

Batt insulation is a type of insulation material commonly used in construction to improve thermal and acoustic performance. It consists of flexible sheets or rolls made from various materials, such as fiberglass, mineral wool, or natural fibers. When installing plasterboard and fiber cement sheeting to arches, batt insulation is often used to provide additional thermal and acoustic insulation within the wall cavities.

The batt insulation is typically placed between the framing members, such as studs or tracks, before installing the plasterboard or fiber cement sheets. It helps to reduce heat transfer, improve energy efficiency, and minimize sound transmission through the walls, providing a more comfortable and quieter indoor environment.

3.1.2. Benefits and Advantages of Using Batt Insulation

- Thermal Insulation: Batt insulation enhances the thermal performance of walls by reducing heat flow through the building envelope. It helps to maintain desired indoor temperatures, reduce energy consumption, and improve overall energy efficiency.
- Acoustic Insulation: Batt insulation effectively absorbs and reduces sound transmission, providing improved acoustic comfort and privacy within the building. It helps to minimize noise transfer between rooms and from external sources.

- Versatility: Batt insulation is available in various thicknesses, widths, and materials, making it suitable for different applications and construction requirements. It can be easily cut and fitted to accommodate irregular shapes and arches.
- Ease of Installation: Batt insulation is relatively simple to install, making it a popular choice for both DIY enthusiasts and professional contractors. It can be easily handled, cut to size, and fitted between framing members.
- Cost-Effective: Batt insulation is generally cost-effective compared to other insulation options. It provides an affordable solution for improving thermal and acoustic performance in buildings.

3.1.3. Common Applications of Batt Insulation in Residential and Commercial Buildings

- ❖ Exterior Walls: Batt insulation is commonly used in exterior wall cavities to enhance thermal insulation and reduce energy loss.
- ❖ Interior Walls: Batt insulation can be installed in interior walls to improve acoustic performance and minimize sound transmission between rooms or units.
- ❖ Ceilings: Batt insulation is often used in ceilings to enhance thermal and acoustic insulation, particularly in multi-story buildings or areas with shared spaces.
- ❖ Floors: Batt insulation can be installed in floor assemblies to improve thermal and acoustic properties, especially in buildings where noise reduction and energy efficiency are important.
- ❖ Retrofit Projects: Batt insulation is also commonly used in retrofit projects to improve the existing thermal and acoustic performance of buildings.

It's important to follow manufacturer guidelines and local building codes when installing batt insulation for plasterboard and fiber cement sheeting to arches. Proper installation techniques and the selection of the appropriate insulation material for the specific application are crucial to achieving optimal performance and compliance with building regulations.

3.2. Types of Batt Insulation

A. Fiberglass Batt Insulation:

1. Composition and Characteristics: Fiberglass batt insulation is made from tiny glass fibers that are spun and bonded together. It is typically available in pre-cut batts or rolls. Fiberglass batts are lightweight, flexible, and have a fluffy appearance.

2. R-value and Thermal Performance: Fiberglass batt insulation has varying R-values depending on the thickness and density of the batts. It provides good thermal insulation by reducing heat transfer through conduction.

3. Advantages and Considerations:

- Advantages: Fiberglass batt insulation is widely available and relatively affordable. It is non-combustible and does not absorb moisture. It is also resistant to pests and mold growth.
- Considerations: Proper installation is crucial to avoid gaps and compression, which can reduce the overall effectiveness. Fiberglass batts may cause skin irritation, so protective clothing should be worn during installation.

B. Mineral Wool Batt Insulation:

1. Composition and Characteristics: Mineral wool batt insulation is made from mineral fibers, typically derived from volcanic rock or slag. It is available in batt form and has a dense, fibrous texture.

2. R-value and Thermal Performance: Mineral wool batt insulation has excellent thermal properties and high R-values. It provides effective insulation by reducing heat transfer through conduction and can withstand high temperatures.

3. Advantages and Considerations:

- Advantages: Mineral wool batt insulation has good fire resistance properties, making it suitable for applications where fire safety is a concern. It also provides excellent sound absorption properties and is resistant to pests, mold, and mildew.

- Considerations: Mineral wool batts are heavier and denser than fiberglass batts, which may make installation slightly more challenging. Proper protective equipment should be worn during installation due to potential irritation.

C. Other Types of Batt Insulation:

1. Cotton Batt Insulation: Cotton batt insulation is made from recycled cotton fibers and has similar characteristics to fiberglass batts. It is a sustainable option and offers good thermal and acoustic insulation. However, it may be more expensive than other types of batt insulation.

2. Cellulose Batt Insulation: Cellulose batt insulation is made from recycled paper or plant fibers treated with fire-retardant chemicals. It provides good thermal and acoustic insulation and is often used in retrofit projects. It requires careful installation to avoid settling and should be protected from moisture.

3. Foam Batt Insulation: Foam batt insulation is made from rigid foam materials, such as polyurethane or polystyrene. It offers excellent thermal insulation and can be used in areas with limited space. It requires proper sealing to prevent air infiltration and may be more expensive than other types of batt insulation.

When selecting batt insulation for plasterboard, consider factors such as desired R-value, fire resistance, moisture resistance, acoustic performance, and budget. Consult manufacturer specifications and local building codes to ensure compliance and optimal performance.

Installation Process of Batt Insulation:

A. Site Preparation and Surface Inspection

1. Ensure the work area is clean and free from debris.

2. Inspect the surfaces where batt insulation will be installed, such as walls and ceilings, for any damage or structural issues that need to be addressed before installation.

B. Proper Handling and Storage of Batt Insulation Materials

1. Wear appropriate protective clothing, such as gloves, long sleeves, and a dust mask, when handling batt insulation materials.

2. Store the insulation in a dry and protected area to prevent moisture damage.

3. Follow the manufacturer's guidelines for specific handling and storage instructions.

C. Measuring and Cutting Batts to Fit Specific Areas

1. Measure the dimensions of the area where the batt insulation will be installed, such as the wall cavity or ceiling space.

2. Use a utility knife or insulation-specific cutting tool to cut the batts to the appropriate size. Ensure the cuts are clean and straight to fit tightly within the framing members.

D. Placement and Fitting of Batts in Walls, Ceilings

1. Start at one end of the wall or ceiling and position the batt insulation into the cavity, ensuring it fits snugly between the framing members.
2. Gently push the insulation into place, avoiding excessive compression that may reduce its effectiveness.
3. For walls, ensure the insulation extends all the way to the top and bottom plates and fills the entire cavity.
4. For ceilings, ensure the insulation is evenly placed and covers the entire ceiling area.
5. Repeat the process for each cavity, ensuring there are no gaps or areas left uninsulated.

Note: It's important to follow the specific installation guidelines provided by the insulation manufacturer, as different types of batt insulation may have variations in installation techniques and requirements. Additionally, local building codes and regulations should be followed to ensure compliance and safety during the installation process. If you're unsure about any aspect of the installation, it's recommended to consult with a professional insulation contractor.

Self check3

Part One: Multiple Choice

1. Which of the following is NOT a benefit of using batt insulation?

a) Thermal insulation
b) Acoustic insulation
c) Versatility
d) Cost-Effectiveness

2. Batt insulation is commonly used in which of the following applications?

a) Exterior walls
b) Interior walls
c) Ceilings
d) All of the above

3. Which type of insulation is made from tiny glass fibers?

a) Fiberglass batt insulation
b) Mineral wool batt insulation
c) Cotton batt insulation
d) Cellulose batt insulation

4. Which type of batt insulation is known for its excellent fire resistance properties?

a) Fiberglass batt insulation
b) Mineral wool batt insulation
c) Cotton batt insulation
d) Foam batt insulation

5. What should be done during the installation process to prevent gaps and compression in fiberglass batt insulation?

a) Wear protective clothing
b) Use a utility knife to cut the batts
c) Ensure the insulation extends to the top and bottom plates
d) Properly handle and store the insulation material

Part Two: True or False

1. Fiberglass batt insulation is lightweight and flexible.
2. Mineral wool batt insulation is resistant to pests, mold, and mildew.
3. Cotton batt insulation is made from recycled cotton fibers.

Unit four: Fix plasterboard and fiber cement products to arches

This unit to provide you the necessary information regarding the following content coverage and topics:

- . Types of plasterboard and fiber cement products suitable for arches
- Measuring and Cutting fit material for arch
- Mechanical Fitting Techniques
- Installation Process
- Combining Adhesive with Mechanical Fittings

Preservation of Fibrous Plaster This guide will also assist you to attain the learning outcomes stated in the Above topic contact. Specifically, upon completion of this learning guide, you will be able to:

- Identify Types of plasterboard and fiber cement products suitable for arches
- Measure and Cutting fit material for arch
- Follow Mechanical Fitting Techniques
- Apply Installation Process
- Combine Adhesive with Mechanical Fittings

4.1 Types of plasterboard and fiber cement products suitable for arches

1. **Flexible plasterboard:**

This type of plasterboard is specifically designed to be flexible and easily bendable, making it suitable for creating curved surfaces like arches. It is typically made with a gypsum core and reinforced with additional materials to enhance its flexibility.

2. **Fiber cement board**:

Fiber cement boards, also known as cementations boards, are a durable and versatile option for constructing arches. They are composed of cement, cellulose fibers, and other additives. Fiber cement boards can be cut and shaped to form arches and are known for their strength and resistance to moisture, fire, and pests.

4.2. **Their purpose**

Flexible plasterboard: The purpose of using flexible plasterboard for arches is to achieve smooth and seamless curved surfaces. It allows for the creation of visually appealing arches without the need for complex construction techniques or custom-made curved materials.

Fiber cement board: Fiber cement boards used for arches provide a sturdy and stable base for structural support. They can help maintain the shape and integrity of the arch while offering resistance to various environmental factors, such as moisture and fire.

Additional considerations

When working with arches and selecting plasterboard or fiber cement products, it is important to consider the specific requirements of the project and consult with professionals or manufacturers for guidance. Factors such as the radius of the arch, load-bearing capacity, fire rating, and moisture resistance should be taken into account to ensure the chosen materials are suitable for the intended application.

When selecting plasterboard or fiber cement products for arches, there are several additional considerations to keep in mind:

1. Arch radius: The radius of the arch will influence the type and flexibility of the materials needed. For tighter or more pronounced arches, you may require more flexible options like specially designed flexible plasterboard. For larger or more gradual arches, standard plasterboard or fiber cement boards may be sufficient.

2. Load-bearing capacity: Consider the load-bearing requirements of the arch. If the arch needs to support significant weight or structural loads, it's important to choose materials that have the appropriate strength and structural integrity. Fiber cement boards are generally stronger and more suitable for heavy-duty applications.

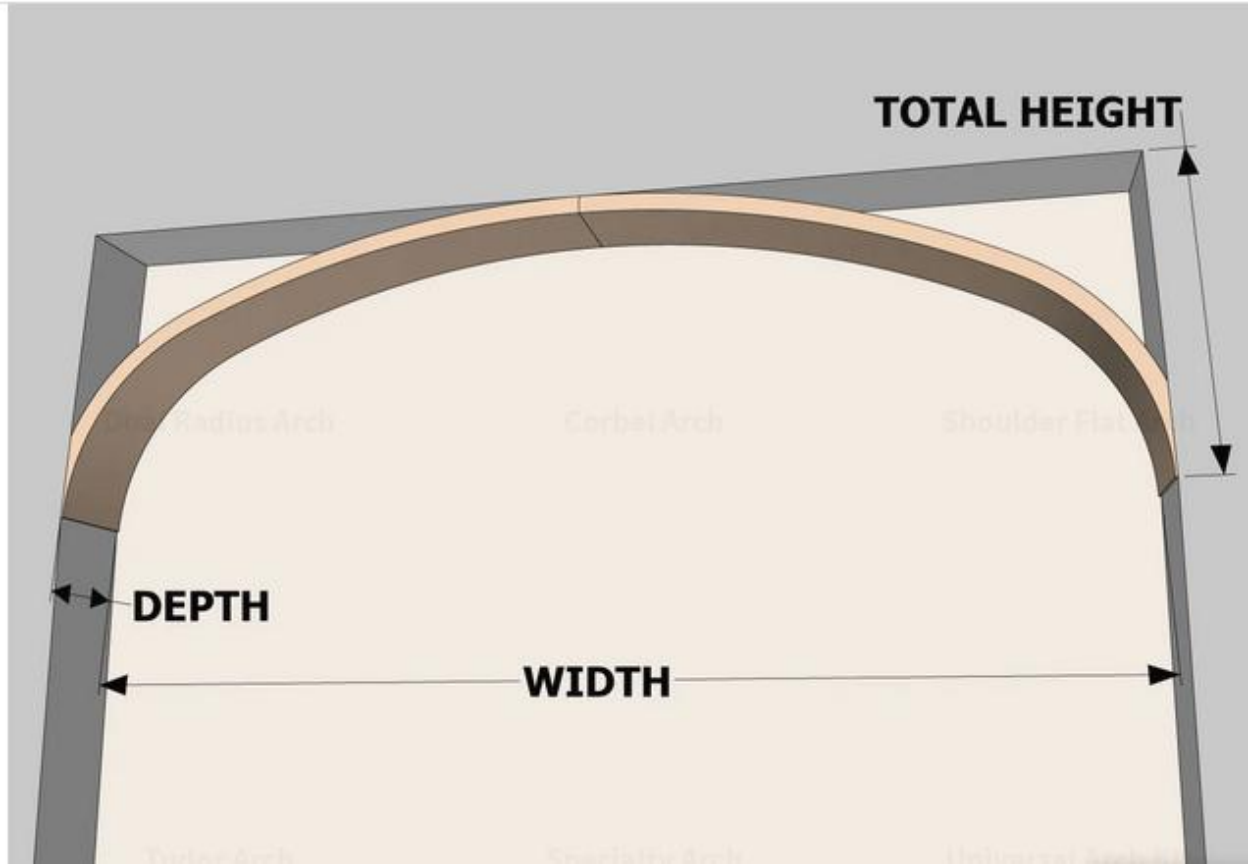
3. Fire resistance: Depending on the location and building codes, fire-rated materials may be required. Both flexible plasterboard and fiber cement boards can have fire-resistant properties, but it is essential to check the specific fire ratings and certifications of the chosen products to ensure compliance with regulations.

4. Moisture resistance: If the arch is in an area prone to moisture or water exposure, such as bathrooms or exterior applications, it's crucial to select materials that are moisture-resistant. Fiber cement boards typically have better moisture resistance compared to traditional plasterboard, making them suitable for such environments.

5. Curving techniques: Consider the installation process and whether any special techniques or tools are required to shape the materials into the desired arch form. Some flexible plasterboards may require wetting or scoring to achieve the desired curve, while fiber cement boards may require cutting and layering to achieve the desired shape.

- **HOW TO MEASURE A DUAL RADIUS ARCH KIT**

1. Measure the depth of your opening to the nearest 1/8”.
2. Measure the width of your opening to the nearest 1/8”.
3. Enter the location (place) where the elliptical arch will be installed in your project (for example: Entry / Dining Rm, Living / Bdrm Hall, Arch #1).



6. Manufacturer guidance: It is always recommended to consult with manufacturers or industry professionals to ensure you are selecting the most appropriate materials for your specific project. They can provide guidance on product suitability, installation techniques, and any specific considerations based on the unique requirements of your arch construction.

4.2. Measuring and Cutting fit material for arch

Measuring and cutting plasterboard and cement sheeting material for arches requires careful planning and precision. Here is a step-by-step guide to help you with the process:

1. Measure the arch: Start by measuring the dimensions of the arch, including the height and width. Take multiple measurements at different points along the arch to ensure accuracy, as arches can have variations in curvature.

2. Create a template: Using a large piece of cardboard or plywood, create a template that matches the shape and dimensions of the arch. This template will serve as a guide for cutting the plasterboard or cement sheeting material accurately.

3. Transfer the template to the material: Place the template onto the plasterboard or cement sheeting material and trace its outline using a pencil or marker. Make sure the template is aligned properly and centered on the material.

4. Cut the material: Depending on the type of material you are working with, you can use different tools for cutting:

- Plasterboard: For plasterboard, you can use a utility knife or a plasterboard saw. Score the material along the traced lines using the utility knife, making multiple shallow cuts. Then, snap the plasterboard along the scored lines. Finally, use the knife or saw to clean up any rough edges.
- Cement sheeting For cement sheeting, a circular saw with a diamond-tipped blade or a specialized cement sheet cutter can be used. Follow the traced lines carefully and make straight cuts along the template. Ensure that you wear appropriate safety equipment, such as goggles and a dust mask, when cutting cement sheeting.

5. Test the fit: Once the material is cut, carefully position it against the arch to check the fit. Make any necessary adjustments by trimming or sanding the edges until the material fits snugly against the arch.

6. Secure the material: Depending on the specific installation method and the recommendations of the manufacturer, you may need to secure the plasterboard or cement sheeting material to the arch using appropriate fasteners, such as screws or adhesive.

Remember to follow safety guidelines and use protective equipment when cutting and handling these materials. It's also important to consult the manufacturer's instructions and recommendations for the specific plasterboard or cement sheeting products you are using, as they may provide additional guidance or requirements for cutting and installation.


Measuring and Cutting of arched plasterboard

Mechanical Fitting Techniques

When it comes to mechanical fitting techniques for arch plasterboard, there are a few approaches you can consider. Here are two common methods:

1. Metal Frame System:

- Construct a metal frame to create the arch shape. This typically involves using metal studs or tracks that are bent to form the desired curvature.
- Cut the plasterboard sheets into smaller sections that can be easily installed on the curved metal frame.
- Attach the plasterboard sections to the metal frame using screws or nails. Make sure to space the fasteners at regular intervals to ensure proper support and stability.
- Use a jointing compound and tape to cover the joints between the plasterboard sections and create a seamless surface.
- Finish the plasterboard surface with a suitable plaster skim or other finishing materials as per your preference.

2. Plywood Backing:

- Create a plywood backing in the shape of the arch. This involves cutting and shaping the plywood to match the desired curvature.
- Attach the plywood backing to the existing wall or framing using screws or nails. Ensure that the plywood is securely fixed and provides a stable support surface.
- Cut the plasterboard sheets into smaller sections that can be easily installed on the curved plywood backing.
- Fix the plasterboard sections to the plywood backing using screws or nails. Again, space the fasteners evenly for proper support.
- Apply jointing compound and tape to cover the joints between the plasterboard sections.
- Finish the plasterboard surface with the desired plaster skim or other finishing materials.

In both methods, it's crucial to ensure that the arch plasterboard is adequately supported and structurally sound. Consider consulting a professional or an experienced tradesperson for guidance and assistance to achieve the best results. Additionally, always follow local building

codes and regulations when working on construction projects. Here are some tips to help ensure that the plasterboard sections are properly aligned on the metal frame or plywood backing:

1. Take accurate measurements: Before cutting the plasterboard sections, carefully measure and mark the dimensions required to fit the arch shape. Double-check your measurements to minimize errors.

2. Use a template: Create a template or pattern of the arch shape using cardboard or thin plywood. This template can serve as a guide for cutting the plasterboard sections accurately.

3. Dry fit before fixing: Before attaching the plasterboard sections permanently, perform a dry fit by placing them on the metal frame or plywood backing. This step allows you to verify the fit, make any necessary adjustments, and ensure proper alignment.

4. Secure with temporary fasteners: To hold the plasterboard sections in place during the dry fit stage, use temporary fasteners such as screws or nails. These can be easily removed later when you're ready to fix the sections permanently.

5. Check for level and plumb: Use a spirit level or a plumb line to ensure that the plasterboard sections are level and plumb. This step is crucial for maintaining a straight and uniform finish across the entire arch.

6. Support the edges: Pay extra attention to supporting and securing the edges of the plasterboard sections. This will help prevent sagging or cracking over time. Consider using additional screws or adhesive if needed.

7. Apply jointing compound and tape: After fixing the plasterboard sections, apply jointing compound and tape to cover the joints. Smooth out the compound to create a seamless surface. This will help achieve a professional finish and hide any imperfections in the joints.

Remember, working with arch plasterboard requires patience and precision. Take your time during the installation process, and don't hesitate to make adjustments as needed to achieve the desired alignment.

4.3. Apply Installation Process

General Application Sequence

Use the following procedures to ensure a successful gypsum board application:

1) After install ceiling panels first, then the wall panels.

2) Once cut to size, position gypsum boards into place without forcing them.
3) Match similar edges and ends, i.e.: tapered to tapered, square-cut ends to square ends.
4) Plan to span the entire length of ceilings or walls with single boards, if possible, to reduce the number of butt joints, which are more difficult to finish. Stagger butt joints and locate them as far from the centre of the wall and ceiling as possible so they will be inconspicuous.
5) In a single-ply application, position all board ends and edges over parallel framing members to ensure that the joints are supported. (Exception: In a two-ply assembly, with adhesive between the plies, the ends and edges of face layers need not fall on supporting members.

Installation Process for Arch Plasterboard

1**. Measure and mark:** Start by measuring the area where you want to install the arch plasterboard. Use a measuring tape and mark the desired shape of the arch on the plasterboard sheet.

2. Cut the plasterboard: Using a utility knife or a plasterboard saw, carefully cut along the marked lines to create the arch shape. Take your time and make precise cuts to ensure a clean edge.

3**. Soak the plasterboard (optional):** If you're using regular plasterboard (not specifically designed for arches), you may need to soak it in water for a few minutes to make it pliable. This step is not necessary if you're using specially made arch plasterboard.

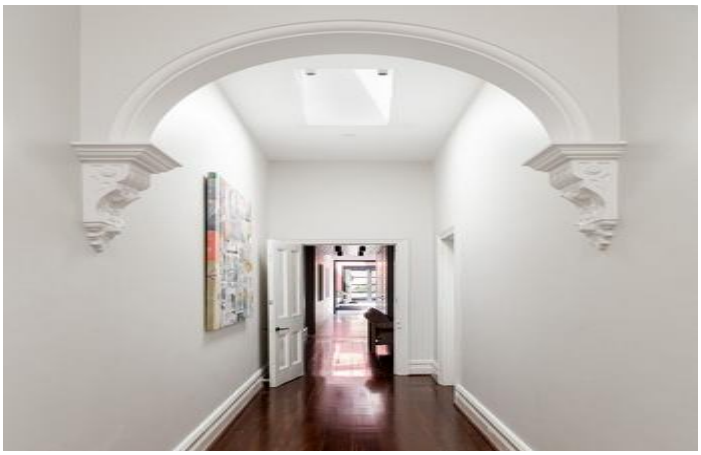
4. Bend the plasterboard: Gently bend the plasterboard along the arch shape you've cut. Apply even pressure along the length of the plasterboard to create a smooth curve. Take care not to apply too much pressure to avoid cracking or breaking the plasterboard.

5. Install the plasterboard: Apply a layer of construction adhesive or plasterboard adhesive to the back of the plasterboard sheet. Press the plasterboard firmly against the wall or ceiling, aligning it with the surrounding plasterboard sheets. Use screws or nails to secure the

plasterboard in place. Make sure to follow the manufacturer's instructions for spacing and placement of fasteners.

6. Fill and finish: Once the plasterboard is installed, use joint compound or plaster to fill any gaps or seams between the arch plasterboard and the adjacent surfaces. Apply the joint compound with a putty knife, feathering the edges to create a smooth transition. Allow the compound to dry according to the manufacturer's instructions.

7. Sand and prime: After the joint compound is dry, sand the surface to achieve a smooth finish. Wipe away any dust, and apply a coat of primer to prepare the surface for painting or further finishing.



b) Installation Process for Fiber Cement Sheeting

1. Prepare the surface: Ensure that the surface where you plan to install the fiber cement sheeting is clean, dry, and free from any loose debris. Remove any existing finishes or protrusions that may interfere with the installation.

2. Measure and cut: Measure the dimensions of the area where you want to install the fiber cement sheeting. Use a measuring tape and a straight edge to mark the measurements on the sheet. Cut the fiber cement sheeting to size using a circular saw equipped with a diamond-tipped or carbide-tipped blade. Follow the manufacturer's guidelines for cutting fiber cement sheeting.

3. Install corner moldings (optional): If desired, install corner moldings on the edges of the area where the fiber cement sheeting will be installed. This can provide a clean and finished look to the installation.

4. Apply adhesive: Apply a suitable adhesive or bonding agent to the back of the fiber cement sheeting. Follow the manufacturer's instructions for the specific adhesive to use. Make sure to apply the adhesive evenly across the entire surface of the sheeting.

5. Position and secure the sheeting: Carefully position the fiber cement sheeting onto the prepared surface, aligning it with the surrounding surfaces or markings. Press the sheeting firmly against the wall or ceiling to ensure good adhesion. Use screws or nails to secure the sheeting in place, following the recommended spacing and placement provided by the manufacturer.

6. Fill and finish: Fill any gaps or joints between the installed fiber cement sheeting using an appropriate filler or caulk. Smooth the surface with a putty knife or trowel to create a seamless finish. Allow the filler or caulk to dry according to the manufacturer's instructions.

7. Prime and paint: Once the filler or caulk is dry, apply a coat of primer to the fiber cement sheeting. Allow the primer to dry, and then apply the desired paint or finish according to your preferences.

Note: The installation process may vary depending on the specific brand and type of arch plasterboard or fibber cement sheeting you are using. It's essential to follow the manufacturer's instructions and guidelines for the best results.

Take care to install mechanical and electrical equipment at the proper distance relative to the framing to allow for the gypsum board thickness so that the trim components, such as cover plates, registers, and grilles, fit correctly. Do not allow the depth of electrical boxes to exceed the framing depth and avoid placing boxes on opposite sides of a wall in the same stud cavity space. Avoid having electrical boxes, cabinets, and other devices penetrate completely through walls as this can be detrimental to sound isolation and fire resistance.

4.4. Combining Adhesive with Mechanical Fittings

When it comes to combining adhesive with mechanical fittings for arch plasterboard and cement sheeting, it can provide additional strength and stability to the installation. Here's a suggested approach:

1. Prepare the surface: Ensure that the metal frame or plywood backing is clean and free from any dust, debris, or loose materials. This will promote better adhesion and improve the overall bond.

2. Apply adhesive: Use a construction adhesive suitable for plasterboard and cement sheeting. Apply the adhesive to the backside of the plasterboard sections or directly onto the metal frame or plywood backing in a zigzag pattern or as per the manufacturer's instructions.

3. Install the plasterboard or cement sheeting: Press the adhesive-coated side of the plasterboard or cement sheeting against the metal frame or plywood backing. Align it properly with the arch shape and ensure it sits securely in place.

4. Mechanical fixing: Use screws or nails to mechanically fix the plasterboard or cement sheeting to the metal frame or plywood backing. This will provide additional support and stability to the installation. Space the fasteners evenly, following the recommended guidelines for the specific material being installed.

5. Check alignment: As you install each section, double-check the alignment with a spirit level or plumb line to ensure it is level and plumb. Make any necessary adjustments before the adhesive fully sets.

6. Allow adhesive to cure: Follow the adhesive manufacturer's instructions regarding curing time. It is important to allow sufficient time for the adhesive to fully cure and set before proceeding to further steps.

7. Jointing and finishing: Once the adhesive has cured, apply jointing compound and tape to cover the joints between the plasterboard sections or cement sheeting. Finish the surface according to your preferred method, such as plaster skim or other finishing materials.

Combining adhesive with mechanical fittings helps create a strong bond and enhances the overall stability of the installation. However, it's important to note that the specific adhesive and fastening methods may vary depending on the manufacturer's recommendations and local building codes. Always refer to the product instructions and consult with professionals if needed to ensure proper installation.

When selecting a plasterboard adhesive, look for a product that offers the following features

1. High bond strength: Ensure that the adhesive has a strong bonding capability to securely hold the plasterboard in place.

2. Flexibility: Look for an adhesive with some flexibility, as arched plasterboard installations may experience slight movement or expansion/contraction.

3. Quick curing time: Opt for an adhesive that cures relatively quickly to allow for efficient installation and reduced waiting time.
4. Compatibility: Verify that the adhesive is compatible with both the plasterboard material and the underlying substrate, such as metal or plywood.
5. Water resistance: If the installation is in an area exposed to moisture, consider using an adhesive with water-resistant properties to prevent potential damage.
Always refer to the manufacturer's instructions and recommendations for the specific adhesive you choose to ensure proper usage and compatibility. Additionally, consult with professionals or experts in the field if you have any doubts or require specific guidance for your project.

Self check

Part one: Multiple Choices

1. Which of the following methods can be used for installing arch plasterboard?

a) Metal Frame System
b) Plywood Backing
c) Both a) and b)
d) None of the above
2. What should be done before fixing the plasterboard sections permanently?
a) Take accurate measurements
b) Use a template
c) Perform a dry fit
d) All of the above
3. How should the edges of the plasterboard sections be supported?
a) Use additional screws or adhesive
b) Apply jointing compound and tape
c) Secure with temporary fasteners
d) None of the above

part two : true or false

4. In a single-ply application, it is important to position all board ends and edges over parallel framing members to ensure that the joints are supported.?

5. Soaking the plasterboard in water is necessary for making it pliable when installing arch plasterboard.?

6. After the joint compound is dry, sanding the surface is not required for achieving a smooth finish.?

7. The installation process for arch plasterboard starts with cutting the plasterboard into the desired shape of the arch.?

OPERATION SHEET-1

OPERATION TITLE:- Fix plasterboard and fiber cement products to arches
PURPOSE:- to ensure that for Installation Process for Arch Plasterboard
CONDITIONS OR SITUATIONS FOR THE OPERATIONS:-
Wear appropriate clothes, shoe.
Ensure the work shop hazard free
Ensure the working area is bright
Make workstation comfortable..
EQUIPMENT TOOLS AND MATERIALS : -
Troll, hammer, chisel, sprit level, water level, lime, cement , gypsum, water , float, knife sponge hacksaw ,scraper
PROCEDURE,

- Measure and mark
- Cut the plasterboard
- Soak the plasterboard (optional.
- Bend the plasterboard
- Install the plasterboard
- Fill and finish
- Sand and prime

Wear working cloths which properly fit with your body.
Make working area hazard free.
Read and interpret manual which guide you how to disassemble and tag engine system components.
The trainees should fulfill safety conditions**.**
QUALITY CRITERIA: Improperly done Installation Process for Arch Plasterboard safely

according to the requested standard

LAP Test -1

LAP Test	Practical Demonstration

Name: _____ Date: _____
Time started: _____ Time finished: _____

Instructions: Given necessary templates /guide, workshop, tools and materials you are required to perform the following tasks within 1:00 hours.

Task 1. Installation Process for Arch Plasterboard

Unit five: Joint and finish materials

This unit to provide you the necessary information regarding the following content coverage and topics:

- Compounds for back blocking and jointing
- Application backblocks
- Additional design details and features.
- Installation of beading
- Finish and jointing plaster board and fiber cement Preservation of Fibrous Plaster

This guide will also assist you to attain the learning outcomes stated in the Above topic contact. Specifically, upon completion of this learning guide, you will be able to:

- .apply Compounds for back blocking and jointing
- Identify Application backblocks
- Prepare Additional design details and features.
- Apply Installation of beading
- Finish and jointing plaster board and fiber cement

5.1. Compounds for back blocking and jointing

The most commonly used compound for back blocking and jointing of gypsum plasterboard is jointing compound. Jointing compound is widely used in the construction industry for filling and finishing joints between plasterboards. It provides a strong and seamless bond between the boards, ensuring a smooth and professional finish.

Jointing compound is typically available as a gypsum-based powder that needs to be mixed with water to form a paste. It is applied over the joint tape to cover and reinforce the joint, creating a solid surface for further finishing and painting.

While other compounds such as setting compound, all-purpose compound, lightweight compound, and topping compound have their specific uses and advantages, jointing compound remains the go-to choice for back blocking and jointing due to its reliability, availability, and compatibility with gypsum plasterboard.

When it comes to back blocking and jointing of gypsum plasterboard, several compounds are commonly used. Here are some of the compounds you can consider:

1. Jointing Compound: Jointing compound is a gypsum-based powder that is mixed with water to create a smooth paste. It is used for filling and finishing joints between plasterboards. The compound is applied over the joint tape to provide a seamless finish.

2. Setting Compound: Setting compound, also known as quick-setting compound, is used for faster drying and setting of joints. It comes in powder form and is mixed with water. Setting compounds are ideal for areas where quick turnaround time is required, as they dry and harden more rapidly than regular jointing compounds.

3. All-Purpose Compound: All-purpose compound is a versatile option that can be used for both back blocking and jointing. It is a premixed compound that comes in a tub or bucket. All-

purpose compounds are convenient to use and are suitable for various applications, such as embedding tape, filling gaps, and finishing.

4. Lightweight Compound: Lightweight compound is formulated with lightweight materials, such as perlite or vermiculite. It is less dense than regular jointing compounds, making it easier to work with and reducing the overall weight of the finished installation. Lightweight compounds are preferred for ceiling applications or where weight is a concern.

5. Topping Compound: Topping compound is a high-quality finishing compound used for the final coat over joints and fastener heads. It has a smoother consistency, allowing for a finer finish. Topping compound is typically used after applying jointing compound to achieve a seamless and professional look.

It's important to note that specific brand names and product availability may vary depending on your location. Always follow the manufacturer's instructions and recommendations for the best results.

5.2. Application backblocks

Certainly! Here's a step-by-step guide on how to apply jointing compound over the joint tape for back blocking and jointing of gypsum plasterboard:

1. Prepare the Joint: Ensure that the joint between the plasterboard panels is clean and free from any dust, debris, or loose material. Use a jointing knife or a utility knife to remove any protrusions or rough edges.

2. Apply Joint Tape: Cut a length of joint tape slightly longer than the joint you're working on. Center the tape over the joint, aligning it with the length of the joint. Press the tape firmly onto the joint, making sure it adheres well to the plasterboard.

3. Mix the Jointing Compound: Follow the manufacturer's instructions to mix the jointing compound. Typically, you'll need to add water to the powdered jointing compound and mix it thoroughly until you achieve a smooth and creamy consistency. Use a mixing paddle or a suitable tool for this process.

4. Load the Jointing Knife: Take a jointing knife and load it with the mixed jointing compound. Scoop a generous amount of the compound onto the blade of the knife.

5. Apply the Compound: Hold the jointing knife at a slight angle and apply the compound over the joint tape. Start by pressing the compound firmly onto the tape, ensuring that it fills the gap completely. Use the knife to spread the compound evenly, covering the tape and extending slightly beyond the width of the joint.

6. Feather the Edges: Once the joint is covered with compound, use the jointing knife to feather the edges of the compound. This means gradually tapering the compound away from the center of the joint, creating a smooth transition between the compound and the plasterboard surface. Feathering helps to create a seamless finish and reduces the need for excessive sanding later.

7. Allow the Compound to Dry: Let the jointing compound dry according to the manufacturer's instructions. Drying times can vary depending on the specific compound used, humidity levels, and other factors. Avoid disturbing the joint during the drying process.

8. Apply Additional Coats: Depending on the desired finish and the condition of the joint, you may need to apply additional coats of jointing compound. Repeat the process of applying compound, feathering the edges, and allowing it to dry between each coat. Multiple coats may be necessary to achieve a smooth and seamless finish.

9. Sand and Finish: Once the compound is completely dry, use fine-grit sandpaper or a sanding block to smooth out any imperfections and create a flush and even surface. Wipe away any dust or debris.

10. Prime and Paint: After sanding, apply a suitable primer to the jointed area to create a uniform surface for painting. Once the primer is dry, you can paint the plasterboard to the desired finish.

Remember to follow the manufacturer's instructions for the specific jointing compound you're using, as drying times and application techniques may vary. It's also a good idea to practice the application technique on a scrap piece of plasterboard before working on the actual joints to ensure you're comfortable with the process.

Types of primers that is suitable for jointed areas

There are specific types of primers that are recommended for the jointed area before painting gypsum plasterboard. The choice of primer depends on the specific requirements of the project and the type of paint you'll be using. Here are a few common types of primers that are suitable for jointed areas:

1. PVA Primer: PVA (Polyvinyl Acetate) primer is a water-based primer that is commonly used for sealing and priming gypsum plasterboard surfaces. It helps to promote adhesion, reduce the absorption of paint, and provide a uniform surface for painting. PVA primers are easy to apply, dry quickly, and are compatible with a wide range of paints.

2. Acrylic Primer: Acrylic primers are also water-based and provide good adhesion and sealing properties. They are suitable for jointed areas and help to create a smooth and even surface for paint application. Acrylic primers offer good durability and compatibility with various paint types.

3. High-Build Primer: High-build primers are designed to fill minor imperfections and create a more level surface. They have a thicker consistency and can help to minimize the appearance of joints and other irregularities. High-build primers are particularly useful when dealing with wider or deeper joints.

4. Stain-Blocking Primer: If the jointed area has been previously stained or discolored, a stain-blocking primer may be necessary to prevent the stains from bleeding through the paint. Stain-blocking primers are formulated to block and seal stains, ensuring a clean and uniform paint finish.

When selecting a primer, consider factors such as the condition of the jointed area, the type of paint you'll be using, and any specific requirements or recommendations from the paint manufacturer. It's advisable to consult with a local paint supplier or professional to determine the most suitable primer for your specific project.

5.3. Additional design details and features.

Arched plasterboard, also known as curved or radius plasterboard, is a specialized type of plasterboard that is designed to create curved or arched walls, ceilings, or other architectural features. Here are some additional design details and features of arched plasterboard:

1. Flexibility: Arched plasterboard is manufactured with enhanced flexibility, allowing it to be easily bent or curved to create desired shapes and curves. It can be used to create smooth, flowing curves or more intricate arch designs, depending on the project requirements.

2. Customizable Sizes: Arched plasterboard is available in various sizes and thicknesses to accommodate different design needs. It can be sourced in standard sizes or custom-cut to specific dimensions, allowing for greater design flexibility.

3. Preformed Options: In addition to the flexibility of standard plasterboard, there are preformed arched plasterboard products available. These preformed arches come in specific sizes and shapes, making it easier to achieve consistent and precise curved designs. They are especially useful for creating repetitive arches or consistent curves throughout a space.

4. Product Compatibility: Arched plasterboard is compatible with other plasterboard products and standard installation techniques. It can be combined with regular plasterboard for seamless transitions between curved and straight sections, ensuring a cohesive and aesthetically pleasing finish.

5. Structural Support: For larger or more complex curved designs, additional structural support may be required. This can include the use of metal framing, curved steel tracks, or other support systems to provide stability and reinforcement for the arched plasterboard.

6. Finishing Options: Arched plasterboard can be finished in the same way as regular plasterboard. This includes applying jointing compounds, taping and finishing the joints, and sanding the surface to achieve a smooth and seamless finish. The curved surface may require special attention and techniques during the finishing process to ensure a consistent appearance.

7. Acoustic and Fire Performance: Arched plasterboard can also be manufactured with additional features to enhance acoustic performance or fire resistance if required. These specialty products are designed to meet specific building code requirements and provide additional functional benefits beyond the aesthetic design.

Arched plasterboard offers architects, designers, and builders the opportunity to create unique and visually appealing curved elements in interior spaces. Its flexibility, compatibility with standard installation practices, and availability in various sizes make it a versatile choice for achieving curved designs with ease.

The typical thicknesses of arched plasterboard can vary depending on the manufacturer and specific product offerings. However, common thicknesses available for arched plasterboard typically range from 9.5mm (3/8 inch) to 15mm (5/8 inch).

Thinner plasterboard, such as 9.5mm, is often used for smaller radius curves or when weight considerations are important. Thicker plasterboard, such as 12.5mm or 15mm, is commonly used for larger curves or when additional rigidity and structural support are required.

It's important to note that the availability of specific thicknesses may vary depending on regional or local markets. It is recommended to consult with suppliers or manufacturers in your area to determine the range of thicknesses available for arched plasterboard. They can provide guidance on selecting the appropriate thickness based on the design requirements and structural considerations of your project.

5.4. Installation of beading

When installing beading on plasterboard for an arch, the process can vary depending on the specific type of beading being used. Here's a general step-by-step guide for installing beading on plasterboard for an arch:

1. Prepare the Plasterboard: Ensure that the plasterboard surface is clean and free from any dust, debris, or loose material. Use a jointing knife or utility knife to remove any protrusions or rough edges.

2. Select the Beading: Choose the appropriate type of beading for your arch. There are various types of beading available, such as PVC or metal arch beading, which is specifically designed for creating clean, smooth edges on arches.

3. Cut the Beading: Measure and cut the beading to the desired length for the arch. It's important to take accurate measurements to ensure a precise fit.

4. Apply Adhesive: Apply an appropriate adhesive to the back of the beading. The adhesive should be compatible with the material of the beading (e.g., PVC adhesive for PVC beading, or suitable adhesive for metal beading). Follow the manufacturer's instructions for the adhesive application.

5. Position the Beading: Carefully position the beading along the edge of the arch, ensuring it aligns with the curvature of the arch. Press the beading firmly against the plasterboard surface to bond it securely.

6. Secure the Beading: Depending on the type of beading, additional securing methods may be required. For example, metal beading may need to be fixed in place using screws or nails, following the manufacturer's guidelines. PVC beading may require additional adhesive or mechanical fixings to ensure a secure attachment.

7. Finishing: Once the beading is securely installed, proceed with the jointing and finishing process. Apply jointing compound over the joints and beading, feathering the edges to create a smooth transition between the beading and the plasterboard surface. Allow the compound to dry according to the manufacturer's instructions.

8. Sanding and Finishing: After the jointing compound is dry, use fine-grit sandpaper or a sanding block to smooth out any imperfections and create a flush surface. Wipe away any dust or debris.

9. Prime and Paint: Apply a suitable primer to the jointed area, including the beading, to create a uniform surface for painting. Once the primer is dry, you can paint the plasterboard and the beading to the desired finish.

It's important to refer to the manufacturer's instructions for the specific beading product you are using, as installation methods and requirements can vary. Additionally, consider consulting with a professional or experienced contractor for guidance and best practices when installing beading on plasterboard for arches, particularly if you are unfamiliar with the process.

While I can't provide specific brand recommendations, I can mention a few types of beading that are commonly used for arches. These types of beading have been widely used and trusted by professionals in the industry. It's always a good idea to consult with local suppliers or contractors who can provide recommendations based on your specific project requirements. Here are some common types of beading used for arches:

1. PVC Arch Beading: PVC arch beading is a popular choice for creating clean and smooth edges on arches. It is flexible, easy to work with, and available in various sizes and profiles. PVC beading is typically lightweight and resistant to moisture, making it suitable for both interior and exterior applications.

Fig 5.1 pvc arch bedding

2. Metal Arch Beading: Metal arch beading, often made from galvanized steel or aluminum, is another option for arches. Metal beading provides a durable and rigid solution for creating precise edges on arches. It is often used in commercial or high-traffic areas where added strength is required.

Fig 5.2 Metal Arch Beading

3. Paper-Faced Metal Arch Beading: Paper-faced metal arch beading combines the strength of metal with the convenience of paper facing. The paper facing allows for easy application of jointing compound and provides a smooth surface for finishing. This type of beading is commonly used in drywall applications.

Fig 5.3 Paper-Faced Metal Arch Beading:

When selecting a specific brand or type of beading, consider factors such as the desired aesthetics, project requirements (such as moisture resistance or fire rating), and compatibility with the chosen jointing and finishing systems. It's also beneficial to consult with local suppliers or contractors who can provide advice based on their experience and knowledge of available products in your area.

5.5. Finish and jointing plaster board and fiber cement

Finish and jointing plasterboard and fiber cement sheeting for arches involve the processes of achieving a smooth and seamless surface on the curved sections of arches constructed with these materials.

1. Finish: The finish refers to the final appearance and texture of the surface of the arch. It involves creating a smooth, even, and visually appealing surface that matches the desired aesthetic and complements the overall design. The finish of arches can vary depending on the specific requirements of the project, including the type of materials used and the desired decorative treatments.

2. Jointing: Jointing in the context of arches refers to the process of concealing and reinforcing the joints between the plasterboard or fiber cement sheets used to construct the arch. Since arches have curved surfaces, jointing requires special techniques to ensure that the joints are properly concealed and the integrity of the arch is maintained.

In both cases, achieving a smooth and seamless finish on arches requires skilled craftsmanship and attention to detail. It may involve custom cutting and fitting of the sheets to match the curvature of the arch, as well as careful application and feathering of the joint compound. Proper sanding and preparation of the surface are also essential before applying any decorative treatments or finishes to the arch..

Importance

Proper joint finishing is crucial for achieving a professional and aesthetically pleasing result. It helps to eliminate visible seams, cracks, and imperfections, ensuring a smooth and seamless appearance. The joint finishing process also enhances the durability and longevity of the installed boards by reinforcing their structural integrity.

Types of Joint Finishing

There are several types of joint finishing techniques commonly used in the construction industry. The choice of technique depends on the specific requirements of the project and the desired level of finish. Some of the most common types include:

1. Taping and Jointing: This method involves applying paper or fiberglass joint tape over the joints and embedding it with joint compound. Multiple layers of joint compound are then applied and smoothed out to create a seamless finish.

2. Corner Beading: Corner beads are used to reinforce and protect the corners of plasterboard or fiber cement panels. They are available in various materials such as metal or PVC and are fixed in place using adhesive or nails. Joint compound is then applied over the corner bead to create a smooth finish.

3. Angle Trims: Angle trims are similar to corner beads but are used to create clean edges and straight lines on external corners or edges of panels. They provide a neat and finished look while protecting the edges from damage.

Methods of Joint Finishing

Jointing plasterboard arches requires specialized techniques and tools to properly achieve a smooth and seamless finish. Here are some specific techniques and tools commonly used for jointing plasterboard arches:

1. Flexible Plasterboard: For arches, flexible plasterboard sheets are typically used. These sheets are designed to be more pliable and can be bent to fit the curved shape of the arch. They are available in various thicknesses and sizes to accommodate different arch dimensions.
2. Cutting and Fitting: Proper cutting and fitting of the plasterboard sheets are crucial for achieving a seamless joint. The sheets may need to be custom-cut to match the curvature of the arch. Tools such as a plasterboard saw, utility knife, or rotary tool with a plasterboard cutting attachment can be used for accurate cutting.
3. Adhesive: In addition to screws or nails, adhesive can be used to secure the plasterboard sheets to the arch. Adhesive helps to provide extra stability and prevent movement or cracking along the joints. It is important to use adhesive specifically designed for plasterboard installation.
4. Joint Compound: Joint compound, also known as joint filler or mud, is a key material used for jointing plasterboard arches. It is applied over the joints to create a smooth and seamless finish. Ready-mixed or dry joint compound can be used, depending on personal preference and project requirements.
5. Joint Tape: Joint tape is an essential component for reinforcing and concealing the joints. For arches, self-adhesive fiberglass mesh tape is commonly used. This type of tape is more flexible and can easily conform to the curved surface of the arch. It helps to create a strong bond between the plasterboard sheets and prevents cracking or separation at the joints.
6. Taping Knife: A taping knife is a tool with a flat, wide blade used for applying and smoothing joint compound. For arches, it is helpful to have a taping knife with a slightly flexible blade to accommodate the curved surface. The taping knife is used to embed the joint tape and apply multiple layers of joint compound, feathering the edges for a seamless finish.
7. Sanding Tools: Sanding is an important step in achieving a smooth finish on plasterboard arches. Sanding blocks or sandpaper can be used to gently sand the joint compound once it has dried. It helps to remove any imperfections, blend the joints with the surrounding surface, and create a uniform finish.

Remember, jointing plasterboard arches requires precision and attention to detail. It is recommended to follow manufacturer guidelines, seek professional advice if needed, and practice proper safety precautions when working with tools and materials.

Gypsum joint compound

Fig 5.4Gypsum joint compound

Gypsum based jointing compounds are used for filling the joints between gypsum plasterboards or gypsum fiber boards. Gypsum based jointing compounds can only be used for interior applications. Setting times vary considerably depending on the geographical region and application

During the joint finishing process, there are several common mistakes that should be avoided to achieve a high-quality result. Some of these mistakes include:

1. Insufficient Joint Compound: Applying an inadequate amount of joint compound can result in weak joints and a lack of adhesion. Be sure to apply enough compound to fully cover the joint and create a strong bond between the panels.

2. Excessive Joint Compound: On the other hand, applying too much joint compound can lead to excessive buildup and an uneven surface. It can also prolong drying time and make sanding more challenging. Apply the compound in thin, even layers, feathering the edges to create a smooth transition.

3. Poor Tape Embedment: When using joint tape, it's essential to ensure proper embedment. Failing to firmly embed the tape in the joint compound can result in tape peeling or visible seams. Press the tape firmly into the compound, removing any air bubbles or creases.

4. Inadequate Feathering: Feathering refers to gradually tapering the joint compound at the edges to create a seamless blend with the surrounding surface. Neglecting to feather the edges

can leave visible ridges or bumps. Take the time to feather each layer of compound to achieve a smooth transition.

5. Skipping Sanding: Sanding is a crucial step in the joint finishing process. It helps to remove imperfections, smooth the surface, and create a uniform finish. Skipping or inadequate sanding can result in a rough or uneven surface that is not suitable for painting or wallpapering.

6. Neglecting Dust Removal: Before applying paint or wallpaper, it is crucial to thoroughly remove any dust or debris from the jointed surface. Failing to do so can lead to poor paint adhesion or visible particles under the wallpaper. Use a damp cloth or vacuum to remove all dust particles.

7. Rushing the Drying Process: Joint compound requires sufficient drying time to fully set and harden. Rushing the drying process by applying subsequent layers too quickly can lead to cracking, shrinking, or a weaker joint. Follow the manufacturer's instructions for drying times and allow each layer to dry completely before proceeding.

8. Ignoring Proper Safety Precautions: Joint finishing often involves working with dust, chemicals, and tools. Neglecting safety precautions such as wearing goggles, gloves, and a dust mask can result in injuries or health hazards. Always prioritize safety and use the appropriate protective gear.

By avoiding these common mistakes and following best practices, you can achieve a professional and seamless joint finish that enhances the overall appearance and durability of the walls or ceilings.

Here are some tips for properly cutting and fitting flexible plasterboard sheets for arches:

1. Measure and Mark: Begin by measuring the dimensions of the arch and mark the cutting lines on the plasterboard sheet. Take accurate measurements to ensure a precise fit. Use a pencil or a scoring tool to make the marks.

2. Score the Plasterboard: To cut the plasterboard, use a plasterboard saw, utility knife, or rotary tool with a plasterboard cutting attachment. Score along the marked cutting lines by applying firm but controlled pressure. Make multiple passes if necessary to ensure a clean score.

3. Bend and Snap: Once the plasterboard sheet is scored, carefully bend it along the cut line. The scored line will facilitate the bending process. Use your hands to apply gentle pressure and

gradually bend the plasterboard to match the curve of the arch. With the right amount of pressure, the plasterboard should snap along the scored line.

4. Fine-Tune the Fit: After bending and snapping the plasterboard sheet, check the fit against the arch. It may require some adjustments to achieve a perfect fit. Use a utility knife or a rasp to trim any excess material or make minor adjustments to ensure a snug fit. Take your time and make small, controlled cuts to avoid removing too much material.

5. Secure the Plasterboard: Once the plasterboard sheet is cut and fitted to the arch, it needs to be secured in place. Use screws or nails specifically designed for plasterboard installation. Additionally, adhesive can be applied to provide extra stability. Follow the manufacturer's recommendations for the proper spacing and placement of fasteners.

6. Repeat the Process: If your arch requires multiple plasterboard sheets, repeat the cutting and fitting process for each sheet. Ensure that the joints between the sheets are properly aligned and supported. Use joint tape and joint compound to create a seamless transition between the sheets.

Remember to prioritize safety while cutting and fitting plasterboard. Wear appropriate protective gear such as safety goggles and gloves. Additionally, it is recommended to practice on scrap pieces of plasterboard first to familiarize yourself with the tools and techniques before working on the actual arch.

Bellow this is same additional techniques for arch gypsumboad work

1. Apply plaster arched edge

2. Finishing plasterboard

3. Using float to apply plasterboard arch

4. Apply mud with a trowel

5. Covering screw head by using float

6. Apply paper tape on the plasterboard edges with put knife

7. Finish the curved edges according to the standard required

8. Apply the second coat of plaster board

9. Sanding and finish plasterboard

Cleaning the surface after finishing gypsum plasterboard

Cleaning the surface after finishing gypsum plasterboard is an important step to ensure a smooth and tidy final result. Here's a guide on how to clean the surface:

- Allow Sufficient Drying Time: Before starting the cleaning process, make sure the plasterboard has completely dried. The drying time can vary depending on factors such as humidity and temperature. Generally, it may take a few days for the joint compound and any applied coatings to dry thoroughly. Refer to the manufacturer's instructions for specific drying times.
- Remove Dust and Debris: Begin by removing any loose dust, dirt, or debris from the surface. You can use a soft-bristle brush or a vacuum cleaner with a brush attachment to

gently sweep or vacuum the surface. Avoid applying excessive pressure to prevent damaging the finish.

- Wipe with a Damp Cloth: Dampen a clean cloth or sponge with water. Wring out any excess moisture to ensure it is only slightly damp. Gently wipe the surface in a circular motion, applying light pressure. This will help remove any remaining dust particles and smudges.
- Mild Soap Solution: If there are stubborn stains or marks on the surface, you can use a mild soap solution. Mix a small amount of mild dish soap or a gentle cleaning solution with warm water. Dampen a clean cloth or sponge with the solution and gently scrub the affected areas. Rinse the cloth or sponge frequently and avoid oversaturating the surface.
- Rinse with Clean Water: After using the soap solution, rinse the surface with clean water to remove any residue. Again, use a slightly damp cloth or sponge for rinsing. Make sure to remove all traces of soap or cleaning solution.
- Dry the Surface: Once the surface is clean, use a soft, dry cloth or towel to pat it dry. Allow the surface to air dry completely before proceeding with any further treatments or finishes.

  Important Note: When cleaning gypsum plasterboard, avoid using abrasive materials, harsh chemicals, or abrasive scrubbing pads, as they can damage the surface. Stick to gentle cleaning methods to preserve the integrity and smoothness of the finish.

  By following these steps, you can effectively clean the surface after finishing gypsum plasterboard, leaving it ready for subsequent treatments such as painting, wallpapering, or other decorative finishes.

Self check

Part one: MultipleChoices

a) Which compound is commonly used for filling the joints between gypsum plasterboards?

A. Jointing Compound
B. Setting Compound
C. Lightweight Compound
D. all

b) Which mistake should be avoided during the joint finishing process to prevent tape peeling or visible seams?

A. Insufficient Joint Compound
B. Excessive Joint Compound
C. Poor Tape Embedment
D. all

c) Which step is recommended after cleaning the surface of gypsum plasterboard?

A. Apply a mild soap solution
B. Rinse with clean water
C. Dry the surface with a soft cloth
D. all

Part two: True/False

a) Gypsum based jointing compounds can only be used for interior applications. (True/False)

b) Skipping sanding after the joint finishing process can result in a rough or uneven surface. (True/False)

c) The drying time of joint compound can vary depending on factors such as humidity and temperature. (True/False)

Part three: Short Answer

a) What are some common mistakes to avoid during the joint finishing process?

b) What are some tips for cutting and fitting flexible plasterboard sheets for arches?

c) What is the recommended cleaning process after finishing gypsum plasterboard?

OPERATION SHEET-2

OPERATION TITLE:- Joint and finish materials

PURPOSE:- to ensure that for Finish and Jointing Plasterboard and Fiber Cement Sheeting for Arches

CONDITIONS OR SITUATIONS FOR THE OPERATIONS:-

Wear appropriate clothes, shoe.
Ensure the work shop hazard free
Ensure the working area is bright
Make workstation comfortable..

EQUIPMENT TOOLS AND MATERIALS : -

Troll, hammer, chisel, sprit level, water level, lime, cement , gypsum, water , float, knife sponge hacksaw ,scraper

PROCEDURE,

- Measure the dimensions of the arch
- Prepare the work area
- Cut the plasterboard or fiber cement
- Fit the plasterboard or fiber cement sheets onto the arch,
- Apply joint tape over the joints between the sheets
- Prepare the joint compound according to the manufacturer's instructions
- using a taping knife, apply a thin layer of joint compound over the joint tape
- Allow the first layer of joint compound to dry completely..
- Apply subsequent layers of joint compound,
- Clean the jointed surface
- Applying any decorative treatments or finishes.
- finishing the joint

Wear working cloths which properly fit with your body.
Make working area hazard free.
Read and interpret manual which guide you how to disassemble and tag engine system components.
The trainees should fulfill safety conditions**.**
QUALITY CRITERIA: Improperly done Finish and Jointing Plasterboard and Fiber Cement Sheeting for Archessafely according to the requested standard

LAP Test -2

LAP Test	**Practical Demonstration**

Name: _____ Date: _____
Time started: _____ Time finished: _____

Instructions: Given necessary templates /guide, workshop, tools and materials you are required to perform the following tasks within 1:00 hours.
Task 1. Finish and Jointing Plasterboard and Fiber Cement Sheeting for Arches