COMMERCIAL HOT WATER SYSTEM SOLUTIONS

# Smaart HOT Product Catalogue

Complete end-to-end engineering for Hotels, Hospitals, Resorts & Apartments — every component from heat pump to last-mile fitting, by trusted global brands.



**60°C**
Max Hot Water Temp

**5000L**
Max Tank Capacity

**50+ Yrs**
CPVC Service Life

**70%**
Energy Saving vs Geysers

**7**
Product Categories

Sunniva · Wilo · WIKA · Cimberio · Astral · Officine Rigamonti · Weld-On · Polycab

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# 01 Primary System Equipment

The three-component heart of every commercial hot water system — working in perfect synergy to generate, store and distribute hot water 24/7 across hotels, hospitals and apartment blocks.

## Where This System Is Deployed

Anywhere large volumes of hot water are needed 24 hours a day. A centralised heat-pump system replaces 50–100 individual geysers across an entire building, reducing energy costs by up to 70% and eliminating individual unit failures.

5-Star Hotels & Resorts | Hospitals & Clinics | Apartment Complexes | Hostels | Industrial Canteens | Spa Facilities

SUNNIVA — SE-AH-U / SE-AH-V SERIES

## Commercial Air Source Heat Pump

Air-to-Water • 3-Phase 380–415V • Up to 60°C



| Parameter | Specification |
|---|---|
| Product Type | Commercial Air Source Heat Pump |
| Power Supply | 380–415V / 50Hz / 3-Phase |
| Compressor | Scroll (Copeland / Panasonic) |
| Refrigerant | R410A / R407C (model dependent) |
| Heat Exchanger | Tube-in-Shell / Brazed Plate |
| Evaporator | Blue Finned Evaporator Coil |
| Expansion Device | Thermostatic / Electronic EEV |
| Rated Water Temperature | 55°C |
| Maximum Water Temperature | 60°C |
| Controller | Smart Touch Digital Controller |
| Protection | HP/LP, Overload, Flow Protection |
| Noise Level | ≤65 to ≤78 dB(A) |

★ WHY A HEAT PUMP — THE MOST ENERGY-EFFICIENT WAY TO HEAT LARGE WATER VOLUMES COMMERCIALLY

- Moves ambient heat from air into water — delivering 3–4 units of thermal energy per unit of electricity consumed (COP 3–4×), saving up to 70% vs electric geysers — mandatory for GRIHA / Green Building ratings.
- Maintains 55–60°C delivery temperature to kill Legionella bacteria — hospital hygiene code compliance without fossil-fuel boilers.
- Single centralised unit replaces 50–100 individual geysers, eliminating recurring maintenance failures across an entire hotel or apartment block.
- Scroll compressors (Copeland / Panasonic) operate at ≤65–78 dB(A) — critical for hotels where guest noise complaints affect ratings.
- Smart Touch Digital Controller enables BMS integration, scheduling, and remote monitoring — reducing operating staff requirements.

SUNNIVA

# Insulated Hot Water Storage Tank

Vertical Cylindrical — 200L to 5000L



| Parameter | Specification |
|---|---|
| Inner Tank Material | Enameled Steel / SS304 / SS316 |
| Outer Cladding | Powder Coated GI / Color Coated Sheet |
| Insulation Type | PUF (Polyurethane Foam) |
| Insulation Thickness | 50–100 mm (model dependent) |
| Tank Capacity Range | 200 L to 5000 L |
| Commercial Sizes | 500L / 1000L / 2000L / 3000L |
| Design Pressure | 6–10 bar (typical) |
| Working Pressure | Up to 6 bar (typical) |
| Design Temperature | Up to 95°C |
| Operating Temperature | 55–60°C typical |
| Corrosion Protection | Double Enamel / SS Construction |
| Mounting | Vertical Floor Mounted |

★ WHY THIS IS NECESSARY

- Buffers demand peaks — during morning rush, stored hot water is drawn without the pump cycling every minute, protecting compressor life.
- PUF insulation retains 55–60°C for hours with minimal standby loss — critical energy efficiency at night-time.
- SS304/SS316 or double-enamelled inner tank prevents rust contamination of potable water — mandatory for 5-star hotel compliance audits.

WILO

# Hot Water Recirculation Pump

Star-Z NOVA T — Glandless Circulator




| Parameter | Specification |
|---|---|
| Product Type | Hot Water Recirculation Pump |
| Series | Wilo Star-Z NOVA T |
| Pump Type | Glandless Circulator Pump |
| Power Supply | 230V / 1 Phase / 50 Hz |
| Power Consumption | 5–7 Watts |
| Max Flow | 0.4 m³/hr |
| Max Head | 1.0 m |
| Max Working Pressure | PN10 / 10 Bar |
| Fluid Temperature | Up to 95°C |
| Protection Class | IP42 |
| Insulation Class | Class F |
| Connection | Rp ½" |
| Body / Shaft / Impeller | Brass / Ceramic / Engineering Polymer |

★ WHY THIS IS NECESSARY

- Keeps hot water continuously circulating — guests receive hot water in under 5 seconds at any tap, non-negotiable for hotels.
- At just 5–7 Watts, costs less to run 24/7 than a 10W LED bulb — economically viable for permanent operation.
- Ceramic shaft + brass body rated for 95°C continuously — purpose-built for hot-water loops, not repurposed cold-water pumps.

## HEAT PUMP AT A GLANCE

- ✔ 70% energy saving vs electric geysers
- ✔ 1 unit replaces 50–100 geysers
- ✔ 60°C Legionella-safe delivery temperature
- ✔ 15+ years heat pump design life
- ✔ COP 3–4× heat energy per unit electricity

02

# Precision Pressure Measurement

No hot water system is safe or efficient without real-time pressure monitoring at every critical node. WIKA — the global benchmark for industrial pressure gauges.

WIKA — EN 837 CERTIFIED

## Mechanical Pressure Gauge

Bourdon Tube Principle • ±0.1% to ±2.5% Accuracy



| Parameter | Specification |
|---|---|
| Type | Mechanical Pressure Gauge |
| Measuring Principle | Bourdon Tube |
| Pressure Type | Gauge / Absolute / Differential |
| Measuring Range | 0–1 bar to 0–1000 bar |
| Accuracy Class | ±0.1% to ±2.5% FS |
| Case Material | SS / Mild Steel |
| Wetted Parts | Brass / SS |
| Lens Material | Acrylic / Safety Glass |
| Connection Type | Bottom / Back Entry |
| Connection Size | ¼" / ½" BSP / NPT |
| Filling Type | Dry / Glycerin Filled |
| Temperature Range | -20°C to +60°C |
| Overpressure Limit | 1.3 × Full Scale |
| Scale Unit | Bar / PSI / kg/cm² |
| Standard | EN 837 |

★ WHY PRESSURE GAUGES ARE NECESSARY — SAFETY & PERFORMANCE MONITORING AT EVERY CRITICAL NODE

- Overpressure is the leading cause of pipe failures in hot water systems — a gauge at the pump outlet and tank inlet gives instant visual indication before a burst occurs.
- Differential pressure reading across filters tells engineers exactly when to service filter cartridges — preventing flow reduction and wasted pump energy.
- Glycerin-filled gauges damp vibration from pump pulsations — dramatically longer service life in pump rooms vs dry gauges.
- EN 837 certification is required by commercial building commissioning reports and insurance inspectors — non-certified gauges fail audits.
- WIKA is specified by name in many government hospital and hotel MEP tender documents due to documented accuracy class compliance.

# 03 Industrial Valve Range

Five valve types — each solving a distinct flow-control or safety function. Cimberio (Italy) and Astral for isolation, Officine Rigamonti (Italy) for pressure safety — all rated for hot water up to 120°C.

CIMBERIO

## Brass Ball Valve

PN25 / Full Bore




| Parameter | Specification |
|---|---|
| Product Type | Brass Ball Valve |
| Valve Type | Full Port / Full Bore Ball Valve |
| Body Material | Forged Brass Alloy |
| Ball Material | Chrome Plated Brass |
| Stem Material | Brass Blow-Out Proof Stem |
| Seat / Seal | PTFE / NBR |
| End Connection | Female Threaded BSP |
| Size Range | 15 mm to 100 mm (½"–4") |
| Pressure Rating | PN25 / PN30 |
| Temperature Range | -20°C to 120°C |
| Handle | Steel Lever + PVC Sleeve |
| Standards | ISO / European Standards |

★ WHY THIS IS NECESSARY

- Isolation valves on every branch — allows maintenance of any segment without shutting the full system.
- PN25 exceeds the 6–10 bar working pressure by a factor of 2.5–4× — built-in safety margin.
- Quarter-turn lever allows fast emergency shut-off in seconds when a leak develops.

ASTRAL

# CPVC Ball Valve

True Union / PN16




| Parameter | Specification |
|---|---|
| Product Type | CPVC Ball Valve |
| Series | CPVC Pro / True Union |
| Material | CPVC |
| Standard | ASTM D2846 / IS 15778 |
| Valve Design | 2-Piece / True Union |
| End Connection | Socket Weld / Solvent Joint |
| Size Range | 15 mm to 100 mm (½"–4") |
| Working Pressure | PN10 / PN16 (up to 16 Bar) |
| Temperature Range | Up to 93°C continuous |
| Color | Off White / Cream |
| Quality Standard | ISO 9001:2015 |

★ WHY THIS IS NECESSARY

- Used in CPVC distribution lines — creates a clean, corrosion-free solvent-welded joint with no threaded adapter needed.
- True Union body unbolts for valve replacement without cutting any pipe — service cost saving over system lifetime.

CIMBERIO

# NRV Check Valve

CIM 30/32 — PN16/20




| Parameter | Specification |
|---|---|
| Model | CIM 30 / CIM 32 |
| Material | Forged Brass EN 12165 CW617N |
| Type | Spring Loaded / Lift Check |
| Operation | Automatic (non-return) |
| Nominal Pressure | PN 16 / PN 20 |
| Size Range | ½″ – 4″ (15 NB – 100 NB) |
| Spring Material | Stainless Steel SS316 |
| Seat Material | PTFE / Metal Seat |
| Temperature Range | -10°C to +95°C |
| Cracking Pressure | ~10–25 mbar (very low) |
| Standard | EN 12266-1 |
| Warranty | Up to 5 years |

★ WHY THIS IS NECESSARY

- Prevents back-flow from tank into heat pump when pump stops — stops cold reverse-flow from thermally shocking the heat exchanger.
- Low cracking pressure (10–25 mbar) minimises pressure drop, reducing pump energy consumption.
- Mandatory in hospitals to prevent cross-contamination between supply branches.

OFFICINE RIGAMONTI

# Safety Relief Valve

LIGHT Series — Italy




| Parameter | Specification |
|---|---|
| **Product Type** | Safety Relief Valve (SRV) |
| **Make** | Officine Rigamonti (Italy) |
| **Series** | LIGHT |
| **Valve Type** | Spring Loaded Safety Valve |
| **Body Material** | Brass |
| **Connection Type** | BSP Threaded (Male/Female) |
| **Available Sizes** | 15 mm, 20 mm, 25 mm (½", ¾", 1") |
| **Set Pressure Range** | 1 bar to 10 bar |
| **Max Working Pressure** | 10 bar |
| **Operating Temperature** | -10°C to 120°C |
| **Standard Compliance** | EN / PED Compliant (Europe) |
| **Installation Position** | Vertical Only |

★ CRITICAL SAFETY DEVICE — WHY NECESSARY

- Mandatory by Indian Boiler Regulations on any pressurised hot water storage system — prevents catastrophic tank rupture if pressure exceeds design limit.
- Italian PED certification guarantees set-pressure tolerance ≤3% — cheap imitations relieve at 150% of set pressure, which is too late to prevent damage.
- Without an SRV, a tank at 10 bar and 90°C becomes a pressure-vessel explosion hazard if the pump or controls malfunction.

CIMBERIO

# Automatic Air Vent

CIM 150VIC — Float Type Valve




| Parameter | Specification |
|---|---|
| Product Type | Automatic Air Vent Valve |
| Model Series | CIM 150VIC |
| Valve Type | Float Operated Automatic Air Release |
| Body Material | Forged Brass Alloy CW617N |
| Float Material | Polyethylene / HT Resistant |
| Internal Spring | Stainless Steel |
| Seal Material | NBR / EPDM |
| Connection Type | BSP Female Thread |
| Available Sizes | ½", ¾", 1" |
| Pressure Rating | PN10 / Up to 10 Bar |
| Operating Temperature | -10°C to 110°C |
| Valve Function | Automatic Air Bleeding |

★ WHY THIS IS NECESSARY

- Air pockets in hot water pipelines cause water hammer, noise, reduced flow, and pump cavitation — auto air vent at high points eliminates all four problems.
- During system fill and after maintenance, large volumes of air enter pipes; without venting the system may fail to circulate at all until manually bled.
- Float-operated auto-release means zero manual intervention required — continuous 24/7 protection.

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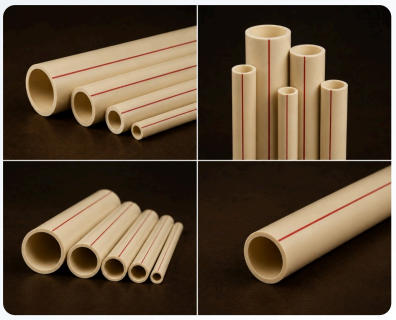
# CPVC Piping System

Chlorinated Polyvinyl Chloride — the only pipe material specifically engineered for hot potable water distribution. NSF/ANSI 61 certified, rated to 93°C, with 50+ year service life and zero corrosion risk.

ASTRAL CPVC PRO — IS:15778 / ASTM D2846 / NSF/ANSI 61

## CPVC Pipe — Hot & Cold Water Distribution

Cell Class DP 110-2-3-2 • SDR 11 / SCH 40 / SCH 80



| Parameter | Specification |
|---|---|
| Material | CPVC — Cell Class DP 110-2-3-2 as per IS:15778 |
| Max Service Temperature | Up to 93°C (200°F) |
| Tensile Strength | 55 N/mm² @ 23°C |
| Flexural Strength | 104 N/mm² @ 23°C |
| Compressive Strength | 71 N/mm² @ 23°C |
| Thermal Conductivity | 0.14 W/mK (copper is 400+ W/mK) |
| Pressure Rating (SDR11 @ 23°C) | 28.1 kg/cm² (400 psi) |
| Pressure Rating (SDR11 @ 82°C) | 7.0 kg/cm² (100 psi) |
| Size Range (CTS) | ½″ to 2″ — SDR 11 & SDR 13.5 |
| Size Range (IPS) | 2½″ to 12″ — SCH 40 & SCH 80 |
| Pipe Lengths | 3 metres & 5 metres |
| Specific Gravity | 1.50 g/cm³ |
| Flammability | Self-extinguishing — UL94 V0, 5VA & 5VB rated |
| Service Life | 50+ years |
| Certifications | NSF/ANSI 61 · IS:15778 · ASTM D2846 · ASTM F441 · UL94 V0 · ISO 9001:2015 · BIS Certified |

★ WHY CPVC PIPING IS NECESSARY — THE ONLY PIPE RATED FOR HOT POTABLE WATER

- Standard uPVC softens and deforms at heat pump delivery temperatures — only CPVC, with its higher chlorination level, is rated for continuous 93°C service. Using uPVC in a hot water system is a code violation.
- Mumbai, coastal Maharashtra and Goa have high-salinity groundwater that aggressively corrodes copper within 5–8 years — CPVC is completely immune to corrosion of any kind.
- NSF/ANSI 61 certification confirms zero leaching of plasticisers or heavy metals into potable water — required for 5-star hotel water quality compliance audits and hospital accreditation.
- Thermal conductivity 2800× lower than copper means the pipe acts as insulation — the recirculation pump consumes less energy maintaining the loop temperature.
- Solvent cement joining requires no flame or skilled brazing — faster installation, lower labour cost, and consistent joint quality vs copper.

## CPVC vs Copper — Why CPVC Wins Every Time

| Parameter | CPVC Pipe (Specified) | Copper Pipe |
|---|---|---|
| **Max Service Temp** | 93°C ✓ | Works but costly |
| **Thermal Conductivity** | 0.14 W/mK ✓ | 400 W/mK — High Loss |
| **Corrosion Resistance** | 100% Immune ✓ | Pits in acidic / saline water |
| **Coastal / Saline Water** | Fully Resistant ✓ | Poor — rapid pitting |
| **Bacterial Growth Risk** | Very Low ✓ | Biofilm risk in old pipes |
| **Installation** | Solvent Cement — Simple ✓ | Brazing — skilled labour needed |
| **Fire Performance** | Self-Extinguishing UL94 V0 ✓ | Conducts & spreads heat |
| **Service Life** | 50+ Years ✓ | 20–30 Yrs in hard water |
| **Material Cost** | 60–70% Lower ✓ | 3–4× Higher |

### CPVC AT A GLANCE

- ✔ 93°C max continuous service temperature
- ✔ 2800× lower thermal conductivity vs copper
- ✔ 50+ years proven design service life
- ✔ 70% cost saving vs copper piping
- ✔ NSF/61 — certified potable water safe

05

# Astral CPVC Fittings & Weld-On Cement

A CPVC system is only as reliable as its joints. Astral's complete fitting family combined with Weld-On solvent cement creates fusion-bonded monolithic joints that are stronger than the pipe itself.

ASTRAL CPVC PRO

## MTA — Male Threaded Adapter

Socket × Male BSP Thread • ½"–4"



| Parameter | Specification |
|---|---|
| Product Type | CPVC Male Threaded Adapter (MTA) |
| Material | CPVC with Brass Insert |
| Standard | ASTM D2846 / ASTM F438 / IS15778 |
| Type | Male Threaded Transition Fitting |
| Connection Type | Socket × Male Thread |
| Jointing | Solvent Weld + Threaded Joint |
| Size Range | 15 mm to 100 mm (½"–4") |
| Pressure Rating | PN10 / PN16 (up to 16 Bar) |
| Max Service Temp | Up to 93°C |
| Insert Material | Brass (for thread strength) |

★ WHY NEEDED

- The critical transition from CPVC solvent-joint pipe to threaded connections at valves, pump flanges and tank nozzles. Brass insert reinforces thread to withstand wrench torque without cracking CPVC.

ASTRAL CPVC PRO

# FTA — Female Threaded Adapter

Socket × Female BSP/NPT Thread • ½"–4"



| Parameter | Specification |
|---|---|
| Product Name | Astral CPVC FTA |
| Material | CPVC with Brass Insert |
| Standard | ASTM F439 / ASTM F438 / ASTM F441 |
| Connection Type | Socket × Female Thread |
| Thread Type | BSP / NPT Female Thread |
| Available Size Range | 15 mm – 100 mm (½"–4") |
| Pressure Rating | SCH 40 / SCH 80 / SDR 11 |
| Installation Method | Solvent Cement + Threaded Connection |
| Max Temp | Up to 93°C |

★ WHY NEEDED

- Connects male-threaded equipment (valves, pump inlets, instruments) into CPVC pipelines. Brass insert prevents cracking under wrench torque and provides long-term thread integrity at elevated temperatures.

ASTRAL CPVC PRO

# Elbow / Tee / Coupling / Bush / Union

Complete Fitting Family • ½″–12″




| Parameter | Specification |
|---|---|
| Elbow Types | 90° Elbow / 45° Elbow |
| Tee Types | Equal Tee / Reducing Tee |
| Coupling Types | Straight / Repair Coupling |
| Bush Type | Reducing Bush — Spigot × Socket |
| Union Construction | 3-Piece (Body + Nut + Tailpieces) |
| Union Sealing | O-ring / Rubber Seal |
| Size Range | 15 mm – 300 mm (½″–12″) |
| Pressure Rating | PN10 / PN16 / SCH40 / SCH80 |
| Max Service Temp | Up to 93°C |
| Standard | ASTM D2846 / F438 / F439 / IS15778 |
| Quality Standard | ISO 9001:2015 |

★ WHY EACH FITTING IS NEEDED

- Elbows change pipe direction around structure with minimal pressure drop. Tees create branch take-offs to each floor/zone.
- Couplings join pipe lengths and repair damaged sections. Reducing Bushes step down from header to branch line sizes.
- Unions at pumps and valves allow equipment removal without cutting any pipe — critical for serviceability over the system's lifetime.

WELD-ON

## CPVC Solvent Cement

Series 724 / 714 / 744 • ASTM F493




| Parameter | Specification |
|---|---|
| Product Series | Weld-On 724 / 714 / 744 |
| Type | Heavy Bodied / Medium Setting CPVC Cement |
| Base Material | CPVC Resin Based Solvent Cement |
| Color | Orange / Gray |
| Standard | ASTM F493 |
| NSF Certification | NSF/ANSI 14 & NSF/ANSI 61 |
| Pipe Compatibility | All CPVC Schedules |
| Recommended Pipe Size | Up to 12″ (315 mm) — 724 Series |
| Joint Type | Solvent Weld Fusion Joint |
| Application | CPVC Pressure Piping / Hot Water / Industrial |

★ WHY NECESSARY

- The solvent chemically dissolves the CPVC surfaces and fuses them into a single monolithic bond — creating a joint stronger than the pipe itself.
- NSF/ANSI 61 certification confirms it adds zero contamination to potable water.
- Orange colour allows site supervisors to instantly verify every joint has been solvent-cemented.

06

# Installation Hardware & Site Accessories

Every fastener, clamp, sealant and structural support needed for a professional, code-compliant installation — supplied as a complete package so no site visits are delayed waiting for missing items.

| Product | Specification & Site Application |
|---|---|
| Hose Nipple | Brass / GI, BSP Threaded, ½″–2″ — connects flexible hoses between rigid pipe and equipment ports |
| Hose Clamp | SS 304, Worm Drive Type, Corrosion Resistant — secures flexible hose ends; SS prevents rust staining in plant rooms |
| Nut & Bolt + 2 Washers | MS Zinc Plated / SS 304, Hex, M8–M16 — spring washer prevents self-loosening under continuous pump vibration |
| C Clamp | MS / SS, Rubber Lined, Heavy Duty — pipe support clamp; rubber lining prevents pipe abrasion and isolates noise transmission |
| D Clamp | MS Saddle Type, GI Finish — wall / slab saddle support for larger bore pipes at required support spacings |
| Teflon Tape | PTFE, 12 mm Width, High Density — thread sealant for all male threaded joints; mandatory at hot water temperatures where metal expands differentially |
| Insulation Tape | PVC Electrical Tape, Flame Retardant, 0.125 mm — electrical insulation at all cable terminations and junction splice points |

| Product | Specification & Site Application |
|---|---|
| **Waterproof Tape** | Butyl / PVC Self-Adhesive, Weather Resistant — sealing outdoor cable splices and conduit entry points against monsoon rain |
| **Cable Tie** | Nylon 66, UV Resistant, 100–300 mm — cable management in control panels and conduit runs; UV resistance for rooftop installations |
| **Rubber Gasket** | EPDM / Nitrile, 3–5 mm — seals flanged connections on tank nozzles and pump flanges; EPDM rated for hot water service |
| **Screw** | MS / SS, Self-Tapping / Machine — fixing conduit clips, panel components, junction box covers |
| **Rawl Plug** | Nylon, 6 / 8 / 10 mm — wall plugs for concrete and brick; required before every clamp and saddle screw in masonry walls |
| **Anchor Fastener** | MS / SS Wedge Type, M8–M12, Heavy Duty — concrete anchors for heat pump base frame and tank stand; single point of failure if undersized |
| **Foot Valve Mesh** | SS 304, Corrosion Resistant — strainer mesh prevents debris entering pump suction line, protecting impeller from wear |
| **Cement Nail** | Hardened Steel, Concrete Fixing — securing cable trays and conduit saddles to RCC slabs |
| **I Stand** | MS Fabricated, Epoxy Coated / Painted — structural support frame for heat pump unit and storage tank; custom fabricated to approved layout drawing |

## WHY THIS HARDWARE PACKAGE IS NECESSARY

- ✔ Unsupported CPVC pipes at elevated temperatures deflect and develop stress fractures at joints within 2–3 years — C and D clamps at code-specified spacing prevent this.
- ✔ PTFE tape on all threaded joints is non-negotiable — without it, metal threads leak at 55–60°C as thermal expansion breaks the thread seal over time.
- ✔ SS304 hose clamps vs mild steel — in humid plant rooms, mild steel clamps rust within 18 months and cause staining; SS304 lasts the life of the system.
- ✔ Anchor fasteners and I-stands provide the rigid base for equipment — incorrectly anchored heat pumps vibrate, loosen pipe connections, and void warranty.
- ✔ EPDM gaskets on all flanged connections — EPDM retains its sealing properties up to 150°C; NBR degrades above 90°C in hot water service.

07

# Electrical & Wiring Components

Polycab FR/FRLS copper cables and ISI-marked PVC conduit — 1100V rated, compliant with IS 694 / IS 9537, for safe and code-compliant power distribution to the heat pump, control panel and recirculation pump.

POLYCAB

## FR / FRLS Copper Power Cables

IS 694 / IS 1554 • 1100V Grade • Annealed Copper Conductor




| Parameter | Specification |
|---|---|
| Cable Sizes | 1.5 / 2.5 / 4 Sq.mm × 3 Core |
| Brand | Polycab |
| Conductor | Annealed Copper |
| Insulation | PVC / FR / FRLS |
| Voltage Grade | 1100 V |
| Standard | IS 694 / IS 1554 |
| Temperature Rating | Up to 70–90°C |
| Application | Heat pump power, motor, panel wiring |

★ WHY THESE CABLES ARE NECESSARY

- 3-phase heat pump compressors draw high starting currents (5–7× rated) — undersized cable causes voltage drop, overheating and nuisance breaker trips. 4 mm² copper is correctly sized for these loads.
- FRLS insulation is mandatory in enclosed plant rooms — toxic PVC smoke is the primary cause of evacuation fatalities in building fires, per NBC 2016 requirements.
- Polycab IS certification guarantees true conductor cross-section — uncertified cables routinely carry 15–20% less copper than marked, causing dangerous overheating at rated load.

POLYCAB

# PVC Conduit Pipe, Bend & Flexible Conduit

IS 9537 Certified • ISI Marked • FR / FRLS • Heavy Duty 25mm



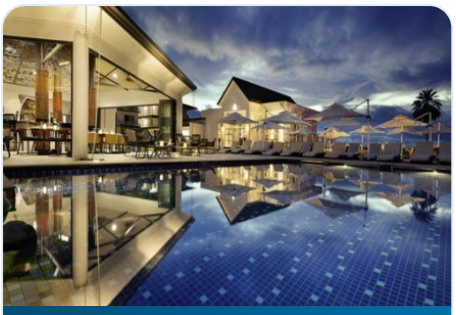
| Parameter | Specification |
|---|---|
| Conduit Pipe | 25 mm, PVC Heavy Duty, ISI Marked |
| Conduit Bend | 25 mm, PVC, Standard Radius |
| Flexible Conduit | 25 mm, PVC Corrugated Type |
| Material Type | FR / FRLS PVC |
| Standard | IS 9537 |
| Colour | Grey / Black |
| Application | Cable protection, concealed / exposed wiring |

★ WHY CONDUIT IS NECESSARY

- All wiring in commercial plant rooms must be in conduit per IE Rules 1956 and NBC 2016 — exposed cable is a code violation and will fail electrical inspection.
- Flexible conduit at heat pump cable entry absorbs compressor vibration — prevents cable fatigue fractures at glands after years of compressor cycling.
- Conduit enables future cable replacement without breaking walls or ceilings — 20-year building maintenance cost saving on rewiring works.

# 08 Application Sectors

Where this system is deployed.



APPLICATION

**Hotels & Resorts**

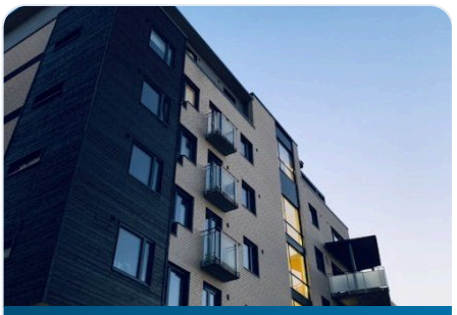
500–5000L daily demand



APPLICATION

**Hospitals**

60°C Legionella-safe supply



APPLICATION

**Apartment Complexes**

Centralised system

Commercial Hot Water System Solutions — End-to-End Engineering, Trusted Global Brands

**BRANDS FEATURED**

Sunniva • Wilo • WIKA
Cimberio • Astral • Officine Rigamonti
Weld-On • Polycab

**CERTIFICATIONS**

NSF/ANSI 61 • IS 15778 • EN 837
ASTM D2846 • ISO 9001:2015 • EN/PED
IS 694 • IS 9537 • UL94 V0 • BIS

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