

The MRC 1200 System

A SYSTEM WITH QUALITY SPEED AND PERFORMANCE

MATERIAL SPECIFICATION

The **MRC 1200 SYSTEM** is a moulded GRP panel. GRP is a composite of a resilient durable resin with an immensely strong fibrous glass. The result is a light durable and astonishingly tough construction material.

Polyester resins made up of Carbon, Hydrogen and Oxygen atoms are polymerised to form long chains of "giant molecules". Polyester resins are thermosetting (they cannot be turned back into the liquid form).

The particular compound used for the manufacture of the MRC 1200 System is a pre-accelerated, filled, fire retarding polyester resin, specifically developed for the building industry. Fully cured laminates made from this compound, reinforced with chopped strand glass mat satisfy the United Kingdom Class "0" in accordance with BS 476 Parts 6 and 7, France M2 and M1 classification, Germany Type A1 in accordance with DIN 4102 Parts 1-8, USA Class 1 in accordance with ASTM E84-84a.



Cure 18h at 40°C

Glass Content	%	25
Tensile Strength	MPa	75
Tensile Modulus	MPa	7000
Compressive Strength	MPa	140
Flexural Strength	MPa	125
Flexural Modulus	MPa	6000
Elongation at Break	%	1.65

Laminated with 4 Layers 450 g/m² mat, durable finish and full range of colours.

Test Methods as in BS 2782:1976

In plane shear strength, MPa 65
Inter-lamina shear strength H MPa 5.8

THE SYSTEM COMPONENTS AND DESIGN

The 1200mm wall panel system comprises a standard main or low level extract panel of 960mm width accompanied by a 240mm wide removable service panel. These panels are fitted alternately to form continuous walling based on a 1200mm module.

The 240mm wide floor to ceiling removable panel allows pipe and cable services to be introduced to any part of the room at any stage during the life of the installation.

Integral wall to wall and wall to ceiling coves are a standard feature of the **MRC 1200 SYSTEM**. In addition wall to floor cove can be integrated to provide a smooth crevice free conclusion.



Walls

A wide range of standard wall panels enable the designer to plan rapidly and efficiently the layout of the required areas. The combination of standard (960mm and 240mm service) panels provides an easy 1200 planning grid arrangement. There are however, occasions for closure panels to be used (standard 800 or 600 or 400 or specials) in order to maximise the available space. Varying heights of walls can be accommodated.

Standard Panel 960mm wide x 150mm deep, full size air duct formed within panel (panel skin thickness 4mm). Walls can be single or double skin.

Doors

GRP Single and Double Doors available within the modular system. Other types of doors can be accommodated.

Windows

Recessed Glass inset into Standard Panels. Standard nominal size 925mm x 800mm (size and fittings can be varied).

Service Fittings

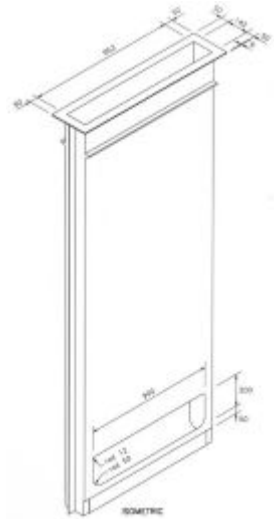
Light and Filter units can be accommodated in ceiling panels allowing maintenance either from above or below.

Low Level Extract Panels

These are wall panels acting as air ducts. They enable Clean Room Designers to achieve elegant and cost effective integration of low level extract ducts with clean room walls without causing step changes in the wall line. This is a feature unique to **SYSTEM 1200**.

The internal surfaces are built up using a finely woven fibre glass sheet, covered with Gel Coat to provide smooth and impervious surfaces.

The low level extract panel is connected to the HVAC ductwork above clean room ceiling level via an integral rectangular flanged opening. Alternatively, side connections may be provided. The standard depth of this panel is 150mm. However deeper panels can be provided to deal with greater air volumes such as those found in vertical laminar flow areas. Windows can also be incorporated within these panels if required.



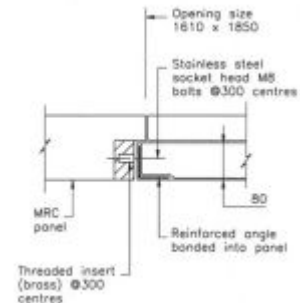
Emergency Escape Panels

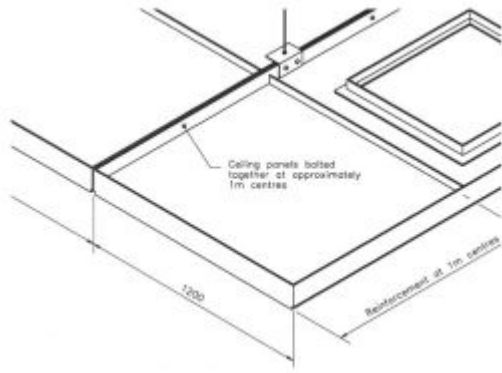
The GRP Escape Panel offers a neat solution to the problem of providing emergency escape doorways but without air leakage, without dust collecting ledges and crevices and yet easy to use. The main body of the panel is moulded GRP of identical specification to other **SYSTEM 1200** wall panels. The knock-out panel can be either GRP or clear polycarbonate sheet. The rip-out rubber gasket is fitted with a suitable grip handle. These panels can be installed into other types of wall systems including those of traditional construction.

Machine Access Panels

The provision of removable Access Panels within a clean room wall normally pose the same challenges described above.

The MRC Machine Access Panel is a simple solution capitalising on the manufacturing technique of the **MRC 1200 SYSTEM**. When both the Emergency Escape and Machine Access Panels are integrated into the one panel, the result is an unbeatable combination



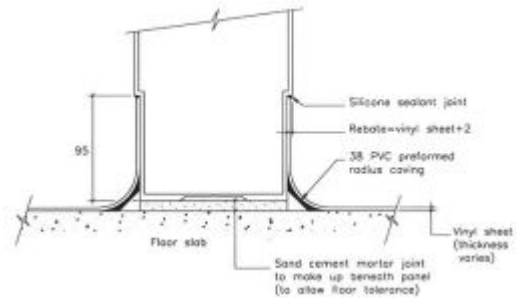


Ceiling

The single skin GRP ceiling panels are 1200mm wide and are simply planned on the same grid as the wall layout. A full range of light, filter and other services can be incorporated into the ceiling. The ceiling may be designed for walk-on servicing capability or lightweight non walk-on duty.

Flooring

The MRC wall panelling has a specially designed rebated foot to accommodate a flush fitting coving from whatever flooring system has been selected by the Client (ie sheet vinyl, tile, epoxy coatings, screeds, etc).



PERFORMANCE

Surface Flame Spread and Fire propagation. Panels satisfy United Kingdom Class 0 and 1 in accordance with BS 476 Parts 6 and 7: France M2 and M1 classification: Germany Type A1 in accordance with DIN 4102 Parts 1-8: USA Class 1 in accordance with ASTM E84-84a.

Ledge free and non-particulate shedding surfaces.
Working Temperature Range - 60 C to 125 C.

Chemical Resistance - strong resistivity to acid, alkali, organic solvents and formaldehyde solution (further detailed schedule available upon request).

MRC System 1200 is designed to satisfy all appropriate clean room standards complying with GMP requirements as identified in International Regulatory Documents such as all European GMP guidelines and the Code of Federal Regulations (USA).

CHEMICAL RESISTANCE

The GRP formulation used in the construction of the **MRC SYSTEM 1200** wall and ceiling panels provides total resistance to the chemicals listed below:

Acetic Acid (10%)	Fatty Acid - Unsaturated	Refinery Crudes
Acetic Acid (25%)	Oleic	Rosin Acids
Aluminium Chloride	Linoleic	Solenious Acid
Aluminium Citrate	Linolenic	Silvery Cyanide
Ammonium Benzoate	Ferric & Ferrous Acetate	Silver Nitrate
Ammonium Chloride	Ferric & Ferrous Chloride	Sodium Acetate
Ammonium Citrate	Ferric & Ferrous Nitrate	Sodium Benzoate
Ammonium Hydroxide (10%)	Ferric & Ferrous Sulphate	Sodium Bisulphite
Ammonium Hydroxide (18%)	Formaldehyde (37%)	Sodium Chlorate (46%)
Ammonium Nitrate (47%)	Formaldehyde (44%)	Sodium Chloride (Saturated)
Ammonium Nitrate (57%)	Glycerine	Sodium Citrate
Ammonium Sulphate	Kerosene	Sodium Glucoheptonate
Amyl Alcohol	Lactic Acid	Sodium Sulphate
Aniline Hydrochloride	Lead Acetate	Sodium Thiocyanate
Aniline Sulphate	Lead Chloride	Sorbitol
Barium Acetate	Lead Nitrate	Soya Oil
Barium Chloride	Levulinic Acid	Sulphanilic Acid
Benzoic Acid Boric Acid	Linseed Oil	Sulphite Liquors
Brine (Saturated)	Magnesium Chloride	Sulphur Dioxide
Butylene Glycol	Magnesium Nitrate	Sulphuric Acid (50%)
Calcium Chloride	Magnesium Sulphate	Tannic Acid
Carbon Dioxide (Saturated)	Maleic Acid (100%)	Tartaric Acid
Chromium Sulphate	Maleic Anhydride (Molten)	Tung Oil
Citric Acid	Mercuric & Mercurous	Water
Copper Ammonium Chloride	Chloride	Zinc Chloride
Cupric & Cuprous Acetate	Naph	Zinc Nitrate
Cupric & Cuprous Chloride	Napthalene	Zinc Sulphate
Cupric & Cuprous Nitrate	Napthenic Acid	
Cupric & Cuprous Sulphate	Nickel Chloride	
Decanol	Nickel Nitrate	
Diallyl Phthalate	Nickel Sulphate	
Dibutyl Phthalate	Oxalic Acid (Saturated)	
Diethylene Glycol	Paraffin	
Dipropylene Glycol	Phosphoric Acid (10%)	
Ethylene Glycol	Phosphoric Acid (20%)	
Fatty Acid - Saturated	Phosphoric Acid (50%)	
Cupric	Phosphoric Acid (75%)	
Lauric	Phthtalic Anhydride (or Acid)	
Myristic	Potassium Chloride	
Palmitic	Potassium Cyanide	
Stearic	Potassium Sulphate	
	(Persulphate)	
	Propylene Glycol	

MAINTENANCE

Cleaning

Regular wash down with mild detergents is all that is required.

Repair

Panels can be quickly and effectively repaired in situ.

Replacement

Individual panels can be easily replaced if required.

Flexibility

Re-use/Extended – panels can be readily dismantled and re-used, amended or extended.

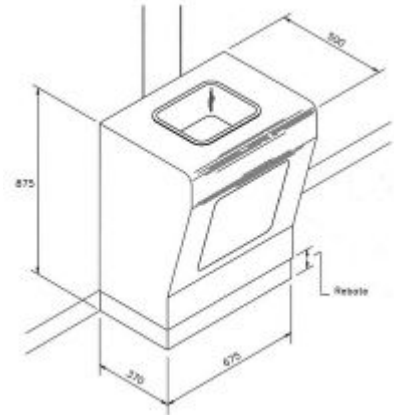


ACCESSORIES

The **MRC SYSTEM 1200** is complimented by a wide range of accessories and furniture enabling it to offer a total solution to all clean room applications and requirements.

Vanity Unit

Made from Glass Reinforced Polyester. Each unit incorporates a stainless steel bowl with access plate moulded within the front cover.



Wallgate Units

Designed for installation where a high standard of hygiene is required. It incorporates a soap dispenser, an instantaneous heated water supply, powerful warm air hand driers with a stainless steel handwash basin. An integral waste sterilisation system is available as an option.

Mirror

Full length, recessed and sealed flush into the MRC panels.

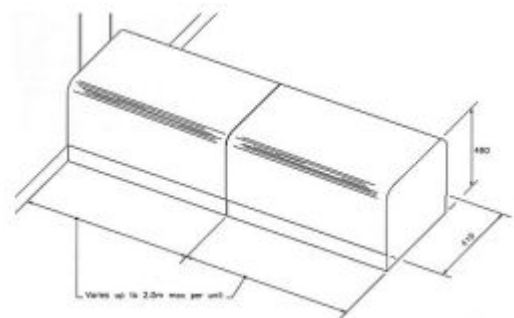
Fire Extinguisher

Wall mounted Glass Reinforced Polyester fire extinguisher boxes. The boxes are supplied in red pigment and are suitable for 5kg CO₂ extinguishers.



Step Over

Moulded from Glass Reinforced Polyester. Designed to fit room wall face to opposing wall face, all joints being sealed.





Light Fittings

Designed to meet clean room standards. The light units are 598mm x 1198mm x 80mm projection into the ceiling void. Each unit is complete with 4 No. tubes each 40W and rated for 30,000 hours continuous. The light fittings are available to be serviceable from above or below.

Transfer Hatch

Satin finish stainless steel construction with electrically interlocked glass or polycarbonate doors. Available in various sizes.