

**A DURABLE FIBRE CEMENT & STEEL  
COMPOSITE BUILDING MATERIAL**

**DURASTEEL®**

**PARTITIONS & WALLS**

**Intumex®**  
ASIA PACIFIC



# Introducing DURASTEEL® Partitions & Walls

## Features

- Up to 6-hour fire resistance.
- Impact resistant.
- Unaffected by water.
- Non-combustible.
- No smoke or toxic gas in a fire.
- Slim, space-saving profile.
- Lightweight, no foundations.
- Easily relocatable.
- Hose-stream resistant.
- Mechanical or seismic vibration resistant.
- Suitable for retro-installation.
- Low sound transmission.
- Fast track buildability.

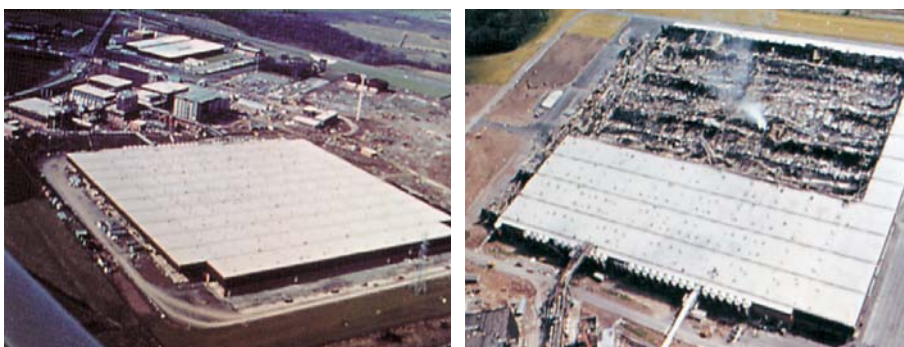


ABOVE: DURASTEEL® undergoing 3.1Bar high pressure hose stream test, in accordance with ASTM E119 requirements.

## General

Intumex DURASTEEL® walls and partitions can be designed and installed in various layout and framing options to meet a multitude of needs. In today's construction markets the need for systems which can perform multifunction roles, whilst capable of allowing for fast track and cost effective installation are of prime importance.

The Intumex DURASTEEL® partition and wall system can easily fulfil all of these roles. DURASTEEL® walls have resistance to extreme impact, both before, during and after exposure to fire. This ensures that under use, they suffer no damage from the ravages of every day exposure within warehouse situations for instance, under fire conditions they protect and maintain compartmentation, after a fire they ensure a building remains secure until remedial work can be undertaken.



As a real example of the effectiveness of the DURASTEEL® walls, see the above photographs, one the right, before the fire, on the left, after the fire. The DURASTEEL® wall separating the two sections of this factory performed exactly as designed, the morning following this fire, the bottling plant on the unexposed face of the wall was operating as usual, thus minimising the effects of the fire as much as possible.

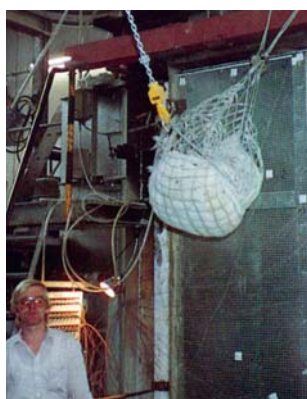
Intumex DURASTEEL® walls are swiftly installed; on most occasions they have no requirement for foundations or other special construction works. Installation is a "dry" trade thus there is no dislocation of other trades working in the same areas, therefore allowing faster project completion.

DURASTEEL® walls can offer both integrity only or integrity and insulation. Walls can be designed for supreme blast resistance and to meet most of the generally recognised fire curves, Cellulosic, Hydrocarbon, Jet Fire etc.

Intumex DURASTEEL® walls combine extremely high levels of fire resistance with impact and water resistance to similar high performance levels. They are proven to withstand the most demanding environments, temperature extremes and hostile elements, they resist high thermal shock, such as high pressure firemen's hoses.

DURASTEEL® walls and partitions can be used in applications such as separation of hazardous areas, shielding for valve actuators, protection of escape routes and tunnels, construction of refuge areas, compartmentation within buildings and storage areas for hazardous goods or protection of equipment.

# Introducing DURASTEEL® Partitions & Walls



*DURASTEEL® wall under-going 4000J impact resistance test following a fire test in accordance with DIN 4102: Part 3 requirements. The top right picture shows a concrete block wall undergoing similar testing.*

## Overview

The general arrangement of the proposed partition system constructed from DURASTEEL® is shown on the following pages.

When considering the design of walls, it is essential to consider the section size of the steel framing in conjunction with the wind loading factors, expansion allowance, together with the height and span of the wall, to ensure that under both fire and ambient conditions, the wall will provide the necessary design performance.

The basic framing system comprises of lightweight steel sections, with a nominal 3mm thickness, dependant on the other design factors etc. All framing is either bolted, screwed or welded into position, again this would be dependant on location, performance parameters and design requirements.



Where a cold smoke seal is required, the boards must be bedded on Intumex fire rated silicone or Intumex Acrylic Intumescent mastic. For demountable wall systems, to ensure sealants do not act as adhesives, a cold smoke seal composed of a 2mm thick strip of Intumex PL Intumescent strip can be applied. For the integrity only systems, the DURASTEEL® walls have been tested with the framework on both the exposed and unexposed faces, to fire, in order to show that the frame can be exposed without detriment to the fire performance of the system.

The framing for the DURASTEEL® wall systems must be securely fixed back to a substrate that has an equal or better fire performance than the designed wall. All fixings must be non-combustible, and must be those listed in the approval documents e.g. the correct type and grade of Teks screws must be used, not cheaper equivalents. The expansion bolts fixing the framing to substrates should be of all steel fabrication and not of aluminium or plastic.



# DURASTEEL® Partitions & Walls

## Types of Application

### Low Radiation Fire Wall

Low radiation fire wall for construction where a high degree of stability and integrity are required, where insulation as measured upon the unexposed surface of the wall is not critical, but where heat radiation from exposed to unexposed face could be of importance. Intumex DURASTEEL® low heat radiation walls offer a reasonably lightweight construction, which is very narrow across its thickness.

Used in conjunction with the Intumex DURASTEEL® pallet racking fire barrier system, This wall offers increased warehousing space and allows for racking to be placed practically against the Durasteel® wall itself.

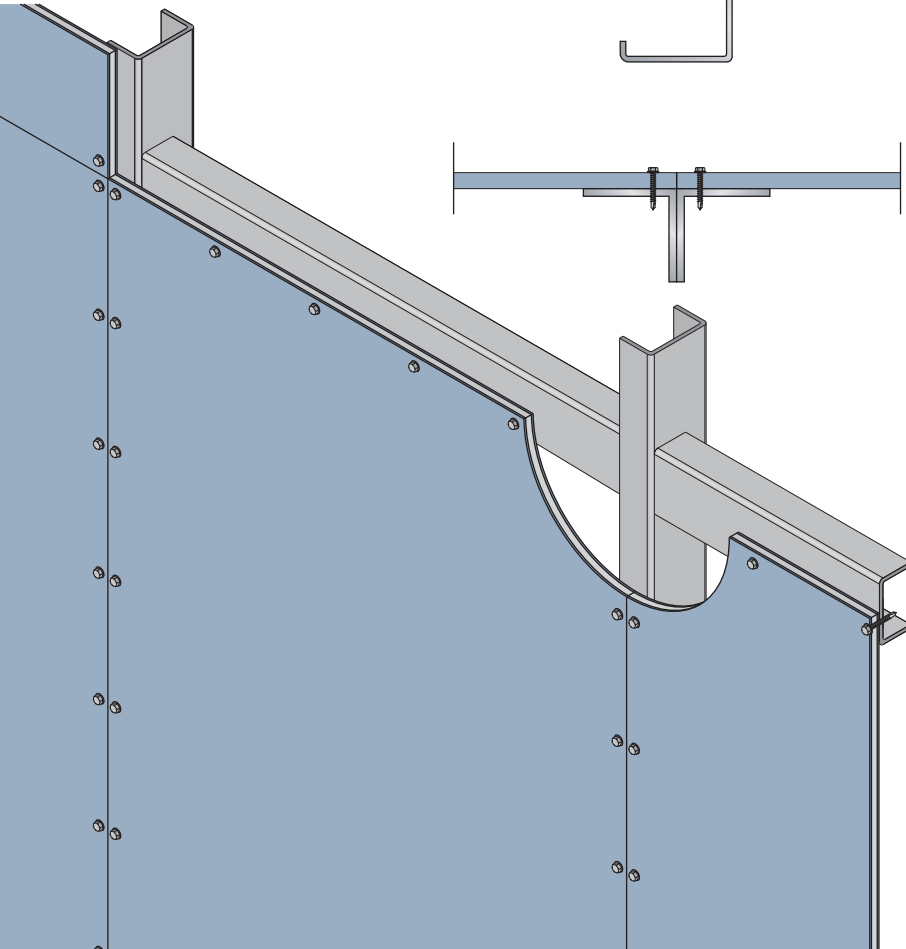
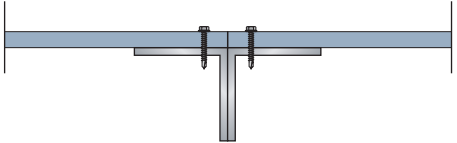
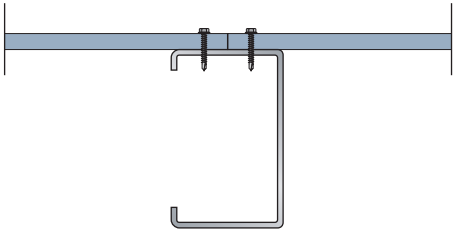


### RADIATION CHARACTERISTICS

Period	Furnace temperature	Temperature 100mm from face
1 hour	945°C	115°C
2 hours	1049°C	136°C
3 hours	1110°C	146°C
4 hours	1153°C	147°C

Single layer DURASTEEL® fire walls can be constructed using framing of either steel channels, Tee sections or back to back angle sections as shown in the two details here.

The type of framing system and the dimensions of the steel sections will depend on the performance requirements of the wall in terms of wind load, fire performance, impact resistance etc. In most instances, DURASTEEL® walls are of a bespoke design. Please consult Intumex Asia Pacific for specific design details to suit your project.



# DURASTEEL® Partitions & Walls

## Types of Application

### Insulated Fire Wall

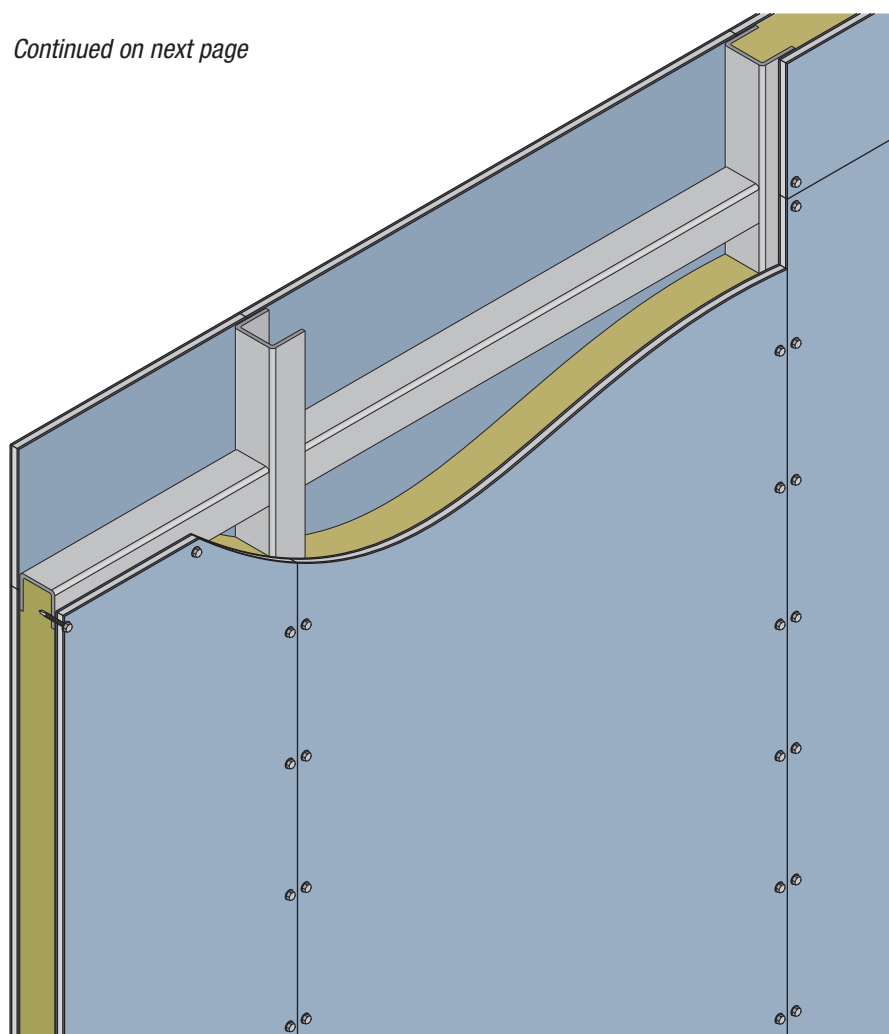
Insulated fire wall for construction where a high degree of stability, integrity and insulation are required during a fire. DURASTEEL® insulated fire walls are designed to prevent the passage of heat from a fully developed fire on the exposed face. The maximum permitted temperature allowable on the surface of the unexposed face is 140°C as a mean temperature overall the surface, or a maximum temperature of 180°C at any one point overall the surface.

Please note this is different to the above low radiation walls where the temperature is measured 100mm away from the face as detailed on opposite page.

Insulated wall constructions should be used in areas where the following may occur:

- Escaping personnel or fire fighters may have bodily contact with the wall surface.
- If used as a wall lining to any escape route, for instance as an access tunnel within a factory.
- If there are any volatile chemicals or materials stored within the vicinity of the fire wall and which may ignite at low temperatures.
- There is a need to improve compartmentation beyond simple integrity.

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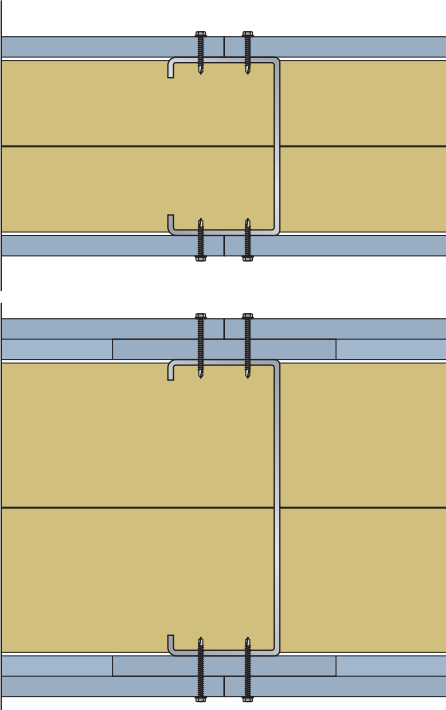
# DURASTEEL® Partitions & Walls

## Types of Application

### Insulated Fire Wall *Continued from previous page*

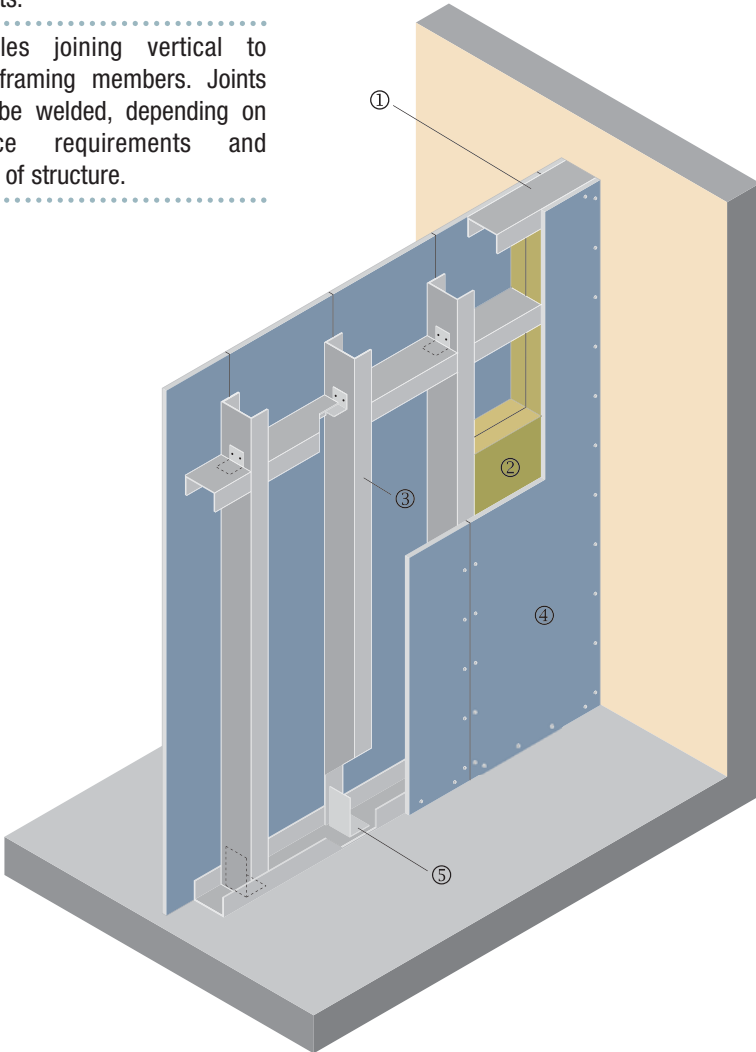
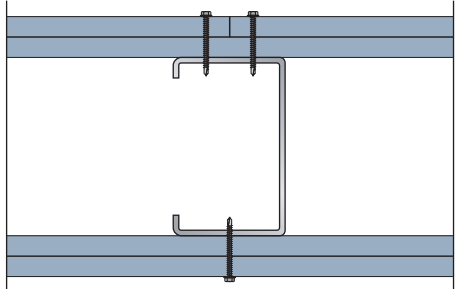
There are a number of methods of constructing insulated wall systems, three of which are depicted here. The first system consists simply of a steel frame, DURASTEEL® boards either side and a mineral wool infill. The second is similar but includes the addition of a DURASTEEL® cover fillet over the steel framing which improves the insulation by reducing heat conduction across the frame. The third on the right using multiple layers of DURASTEEL®.

Each option has its own benefits. The type of system, thickness of DURASTEEL®, type, thickness and density of the mineral wool, cover strips or not are all dependent on the fire and physical performance required from the system. Please consult Intumex Asia Pacific for specific details to match your project requirements.



### COMPONENTS

- ① Steel head and track framing.
- ② Mineral wool, thickness, density and layers dependant on fire performance requirements.
- ③ Vertical steel framing positioned at nominal 1200mm centres. Note that centres and dimensions of framing can alter depending on physical performance requirements.
- ④ Intumex DURASTEEL® boards, 6mm or 9.5mm depending on performance requirements.
- ⑤ Steel angles joining vertical to horizontal framing members. Joints can often be welded, depending on performance requirements and dimensions of structure.



# DURASTEEL® Partitions & Walls

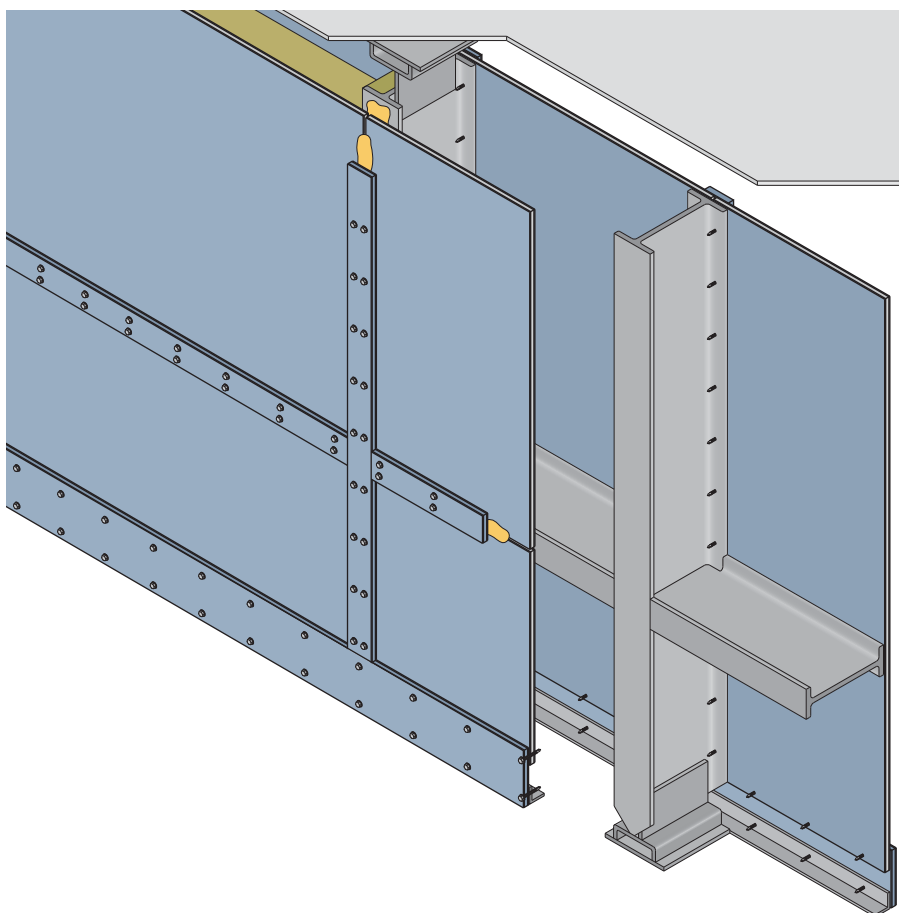
## Types of Application

### Fireblast™ Wall

Designed specifically to protect personnel and equipment from the effects of explosion, fire, impact, and the effects of smoke and fumes in hazardous environments, such as offshore platforms, petrochemical installations, chemical plants, military establishments, civil defence works and hazardous process plants.

Additional features of Fireblast™ fire and blast resistant walls:

- Blast resistant, tested from 0.3 to 2 bar pressure.
- Resistant to hydrocarbon fires, tested to H120.
- Impact resistant to 4000J after 180 minute fire test.
- Jet fire resistant (J60).
- High energy absorption.
- Purpose developed software produces individual designs in minutes.
- Hose stream resistant to a 5 Bar high pressure hose. In accordance with DIN 4102 Parts 2 and 3 requirements.



Fireblast™ is a structure made of rigid steel sub frame with DURASTEEL® fixed to both sides. One of this systems major advantages is its eminent suitability for retro-installation, especially in confined spaces, making Fireblast™ ideally placed for the improvement of safety on existing structures, as well as on new installations. This DURASTEEL® system combines light weight with exceptional strength, energy absorption and durability.

Unlike many fire and blast resistant materials, DURASTEEL® is non combustible and will withstand an explosion followed by a prolonged fire and still be unaffected by hose stream fire fighting. Its integrity remains unimpaired, ensuring continued protection against fire, impact and moisture as well as preventing the escape of smoke and toxic gases.

DURASTEEL® systems are tested up to H120 fire rating, and the systems can be designed to suit specific project performance requirements.

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# DURASTEEL® Partitions & Walls

## Types of Application

### Fireblast™ Wall *Continued from previous page*

All Fireblast™ walls are individually tailored to suit specific project performance requirements, please consult Intumex Asia Pacific for specification and construction details.

#### FIRE RATING PERFORMANCE

TYPE	BUILDING & CONSTRUCTION	OFFSHORE CONSTRUCTIONS
Single-skin Constructions	1-hour, 2-hour or 4-hour fire integrity	A0, H0
Double-skin Constructions	1-hour, 1.5 hours, 2-hour, 3-hour, 4-hour or 6-hour fire resistance	A60, A120 - Ratings for standard fire tests. H60 and H120 - Ratings for hydrocarbon fire tests..
Specials	Intumex DURASTEEL® has designed and installed many purpose-built fire walls, which provide performance characteristics beyond fire resistance. All structures can be independently assessed to ensure the required performance is achieved.	

#### CONSTRUCTION DETAILS

SPECIFIC APPLICATIONS	PRIMARY PERFORMANCE REQUIREMENT	FIRE PERFORMANCE (minutes)	ACOUSTIC PERFORMANCE Rw (dB)
<ul style="list-style-type: none"> <li>Public and service corridors</li> <li>Warehousing</li> <li>Industrial buildings</li> <li>Mass transit systems</li> <li>Manufacturing facilities</li> <li>Other areas subject to abnormally rough use</li> </ul>	Impact resistance	<ul style="list-style-type: none"> <li>120 (integrity)</li> <li>240 (integrity)</li> <li>240/60</li> <li>240/120</li> <li>240/240</li> </ul>	<ul style="list-style-type: none"> <li>30</li> <li>32</li> <li>42</li> <li>47</li> <li>52</li> </ul>
<ul style="list-style-type: none"> <li>Off-shore facilities</li> <li>Petro-chemical industry</li> <li>Gas processing plant</li> <li>Other areas subject to projectile or explosion risk</li> </ul>	Blast resistance	<ul style="list-style-type: none"> <li>120 minutes hydrocarbon fire</li> <li>120 minutes hydrocarbon fire</li> <li>60 minutes jetfire</li> </ul>	<ul style="list-style-type: none"> <li>42</li> <li>47</li> <li>52</li> </ul>

NOTE: Fire performance figures denote integrity and insulation performance respectively. Acoustic performance figures established by direct testing or by assessment.

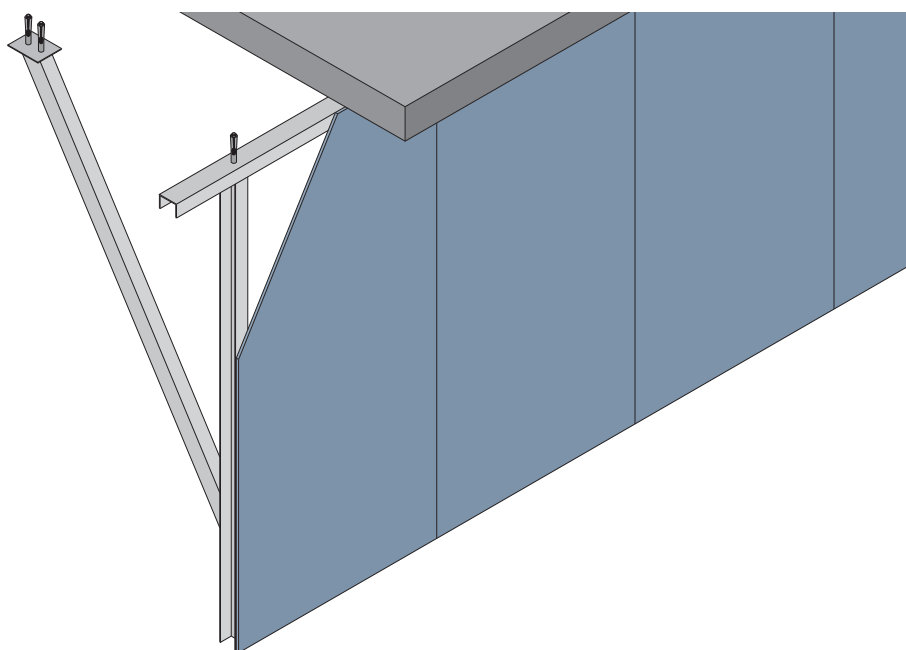
For details of specifications and installation details, please consult your local DURASTEEL® distributor or your local Intumex Asia Pacific office.



# DURASTEEL® Partitions & Walls

## Types of Application

Fire Barriers, Spandrel Panels etc

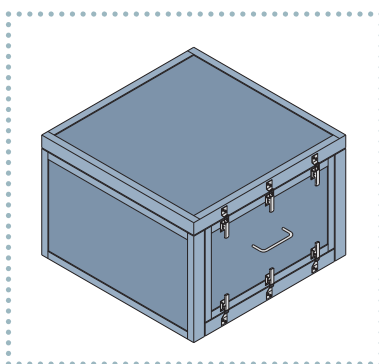


### Valve Protection Enclosures

The ability to isolate storage areas or to direct highly combustible fuels away from a heat source through a series of protected valves is paramount in the event of fire.

When subjected to high temperatures, the plastic parts of a valve can easily be rendered inoperative, resulting in the valve's inability to divert or arrest flow.

Intumex DURASTEEL® can offer different methods of protection for valves, dependent on the requirement. In certain circumstances, it may be sufficient to protect the valve with a fire resistant shielding. In other cases, a more substantial form of protection may be required. In these circumstances, the valve can be fully enclosed within a DURASTEEL® valve actuator box. These boxes have been designed to ensure the valve temperature cannot rise by more than 30°C in 15 minutes, or 30°C in 30 minutes, depending on the type of DURASTEEL® protection applied.



This level of integrity and insulation applies even when the actuator boxes are exposed to temperatures in excess of 1100°C, the test temperature selected to simulate the conditions of a hydrocarbon spillage fire. 30°C was calculated as the maximum permissible increase due to the extremely high ambient temperature experienced in the Middle East. With temperatures rising regularly above 40°C in Abu Dhabi for instance, the tested temperature rise of the actuator has to be kept extremely low.

Smoke kills more people in fires than heat, flames or structural collapse. It is therefore recognised that occupant safety in a fire can be greatly improved by providing an efficient smoke extraction system. Part of an engineered smoke control system may involve the provision of smoke reservoirs, the use of smoke channelling screens and smoke curtains.

Testing Standards for Smoke Control Equipment Smoke curtains and screens shall meet the requirements of BS 7346: Part 3: 1990, which requires the screen to withstand a fire temperature of 600°C +/- 20°C for a minimum of 30 minutes. The Durasteel® system has been tested to the criteria of BS 476: Part 22, with its much higher exposure temperature requirements and it provided a performance in excess of 240 minutes.

DURASTEEL® barriers can also be used in position as Horizontal "Wings" at the head of fire walls, providing a barrier which makes it exceptionally difficult for fire to breach a roof and thus leap over the top of the fire resistant wall system.

DURASTEEL® panels can also be used within Spandrel panel systems, positioned at the end of floor slabs in order to prevent fire bridging gaps between floor slabs and curtain wall systems.

For details of these applications, please consult Intumex Asia Pacific.



# Project References

DURASTEEL® fibre cement and steel composite board is well known for its high impact performance and has been extensively used in many noteworthy projects over the countries in Asia Pacific and Europe, such as the following:

PROJECTS	APPLICATIONS	YEAR
K.C.R.C. EastRail extension, HONG KONG	Smoke extraction duct, access doors, plenum ceiling, services enclosure	2004
Wanchai Police Headquarters (phase 3), HONG KONG	LT duct for smoke extraction, plenum ceiling, services enclosure, town gas pipe enclosure, bulkhead for fire shutters, smoke barrier	2004
M.T.R.C. Stations Improvement, HONG KONG	Smoke extraction ducts, fire doors, kiosk fire separation, services enclosure	1997~2004
School Improvement Programme (phase 1, 2, 3 & 4), HONG KONG	Services enclosure, fire barrier, ventilation ducts	1995~2004
Sub-stations for H.K. Electric Company, HONG KONG	Services enclosure, ventilation duct	1992~2004
Government Housing Developments, HONG KONG	Ventilation ducts, services enclosure	1990~2004
Hong Kong University extension, HONG KONG	Loadbearing floor, services enclosure, ventilation ducts	1990~2004
Sub-stations for China Light & Power Ltd., HONG KONG	Cable trench cover, services enclosure	1990~2004
Brisbane bus tunnel	Ducting/shield	2003
H.K. Chinese Women's Club College, HONG KONG	Loadbearing ceiling	2003
K.C.R.C. WestRail stations and tunnels, HONG KONG	Smoke extraction duct, access doors, floor hatches, plenum ceiling, services enclosure, demountable fire barrier	2003
Kwai Chung Cargo Terminals, HONG KONG	Smoke vents, services enclosure, fire doors, fire barrier, bulkhead for fire shutters	1990~2003
Charter House, HONG KONG	Smoke extraction duct, services enclosure, access doors with architectural finishes	2002
M.R.T.C. North East Line, SINGAPORE	Ventilation and smoke extract duct, demountable fire barrier, access floor hatch	2002
M.T.R.C. Tseung Kwan O extension (stations and tunnels), HONG KONG	Smoke extraction duct, access doors and hatches, services enclosure, town gas pipe enclosure	2002
Olympic Station Commercial & Residential Development (phase 1, 2 & 3), HONG KONG	Smoke vents, access hatches, services enclosure, smoke barrier, bulkhead for fire shutters	2000~2002
New World First Depot, HONG KONG	Smoke extraction duct, services enclosure	2000
The University of Science & Technology, HONG KONG	Services enclosure, fire doors, ventilation duct	1992~2000
Harbour Plaza Resort City, HONG KONG	Smoke extraction ducts, smoke vents, services enclosure, plenum ceiling, bulkhead for fire shutters	1999
London Underground: Jubilee Line extension, U.K.	Fire rated and non-fire rated ventilation ductwork	1993~1999
Cheung Kong Center, HONG KONG	Smoke extraction duct, smoke vents, services enclosure, smoke barrier, lift shaft duct	1998
International Finance Centre One, HONG KONG	Smoke extraction, smoke barrier, services enclosure	1998

# Project References

PROJECTS	APPLICATIONS	YEAR
Louis Vuitton at Canton Road, HONG KONG	Loadbearing floor	1998
Lantau Airport Railway (stations and tunnels) HONG KONG	Smoke extraction duct, fire doors, smoke barrier, services enclosure, plenum ceiling	1996~1998
Cathay Pacific Catering Services, HONG KONG	Smoke extraction duct, services enclosure, fire door	1997
Hong Kong International Airport, HONG KONG	Sliding fire door, smoke extraction duct, services enclosure	1997
HSBC Building, HONG KONG	Loadbearing floor, services enclosure	1997
North District Hospital, HONG KONG	Services enclosure, town gas pipe enclosure	1997
Royal Ascot Commercial & Residential Development, HONG KONG	Smoke vents, services enclosure, loadbearing floor	1997
Tuas Bay tunnel, SINGAPORE	Joint cover	1997
Western Harbour crossing, HONG KONG	Smoke extraction duct, movement joints	1997
Labrador sub-station, SINGAPORE	Floor opening	1996~1997
Australia Shopping Centre, AUSTRALIA	Ducting system	1996
Comcentre, SINGAPORE	2 hours plenum ceiling	1996
Hollywood Plaza, HONG KONG	Smoke vents, fire doors	1996
Hunghom Freight extension, HONG KONG	Smoke extraction duct, plenum ceiling	1996
Kwinana Power Station (coal), AUSTRALIA	Smoke barriers, fire doors	1996
Nestle Dairy Farm Factory, HONG KONG	Smoke extraction duct, services enclosure	1996
Sydney harbour tunnel, AUSTRALIA	Expansion joint protection, fire doors	1996
Telepark, SINGAPORE	2 hours plenum ceiling	1996
United Christian Hospital, HONG KONG	Services enclosure, ventilation ducts	1996
Woodlands sub-station, SINGAPORE	Trench cover	1996
Tampines Mall, SINGAPORE	2 hours plenum ceiling	1995~1996
Temasek Polytechnic, SINGAPORE	2 hours enclosure	1995~1996
Republic Plaza, SINGAPORE	2 hours trafficable ceiling	1994~1996
Senoko Power Station, SINGAPORE	Fire barrier	1994~1996
Suntec City (phases 3, 4 & 5), SINGAPORE	2 hours trafficable ceiling	1993~1996
Nethersole Hospital, HONG KONG	Plenum ceiling, services enclosure	1995
AIA Tower, SINGAPORE	2 hours enclosure	1994
AutoPlaza, HONG KONG	Loadbearing floor	1994
New Century Hotel & Plaza, HONG KONG	Smoke extraction duct, smoke vents, smoke barrier, services enclosure, plenum ceiling, fire doors	1994

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# Project References

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PROJECTS	APPLICATIONS	YEAR
Times Square, HONG KONG	Services enclosure, bulkhead for fire shutters	1994
Black Point Power Station, HONG KONG	Ventilation ducts, fire doors, services enclosure	1993
Boy Scout Headquarters, HONG KONG	Smoke vents, services enclosure	1993
Corporation Place, SINGAPORE	4 hours ceiling	1993
International Finance Centre Two, HONG KONG	Smoke barrier, insulated fire doors, ventilation ducts, services enclosure	1993
Lane Crawford Place, SINGAPORE	2 hours pipe enclosure	1993
Tate's Cairn Tunnel, HONG KONG	Cable enclosure, plenum cable	1993
British Rail: Waterloo International Rail Terminal, U.K.	Ductwork	1992
Channel Tunnel, U.K.	Cable enclosure	1992
City Bank Headquarters & Plaza, HONG KONG	Smoke vents, fire doors, services enclosure	1992
London Underground: Bow Road Station, U.K.	Fire doors	1992
Route 5 road tunnel, HONG KONG	Cable trunking enclosure	1992
M.R.T.C., SINGAPORE	Smoke extract duct, plenum ceiling, fire barrier, access floor hatch, fire door	1989~1992
M.T.R., HONG KONG	Cable enclosure, plenum ceiling, duct, fire wall, plant room enclosure	1988~1992
Bank of China, HONG KONG	Services enclosure, ventilation ducts	1991
Dragon Centre, HONG KONG	Smoke extraction duct, smoke vents, fire doors, services enclosure, plenum ceiling	1991
London Underground: New Angel Station, U.K.	Cable enclosures and separation, stairway protection	1991
Miramar Hotel, HONG KONG	Smoke vents, services enclosure	1991
Peninsula Hotel extension, HONG KONG	Smoke extraction duct, smoke vents, fire doors, services enclosure	1991
British Rail: St. Pauls Thames Link, U.K.	Smoke ventilation ductwork	1990
Garwick Airport, U.K.	Ventilation and smoke extract duct	1990
Pacific Place Two, HONG KONG	Smoke vents, smoke barrier, ventilation ducts, services enclosure, bulkhead for fire shutters, drencher bulkhead	1990
Shing Mun Tunnel, HONG KONG	Cable enclosure	1989
Stanstead Airport, U.K.	Smoke extract duct, fire barrier, fire door	1989
Sydney Harbour tunnel, AUSTRALIA	Protection to joints	1989
The 2nd Cross Harbour tunnel, HONG KONG	Fire door, cable protection, service enclosure	1989
HSBC Headquarters, HONG KONG	Smoke extraction duct, services enclosure	1985

# Approval of Codes & Standards

DURASTEEL® systems have also been tested to many international standards below and many other national standards:

- **AS 1530: Various parts** ..... AUSTRALIA
- **CAN 4-S114-M80** ..... CANADA
- **China Fire Rules & Regulations 1984** ..... P.R. CHINA
- **Arreté du 30 Juin 1983** ..... FRANCE
- **Arreté du 21 Avril 1983** ..... FRANCE
- **DIN 4102: Various parts** ..... GERMANY
- **DIN 52104** ..... GERMANY
- **PA III 4.596** ..... GERMANY
- **BS 476: Various parts** ..... U.K.
- **ASTM E 119** ..... U.S.A.
- **ASTM E 136** ..... U.S.A.

Approvals for DURASTEEL® systems have been given by the following organisations:

- **Hong Kong Fire Services Department** ..... HONG KONG
- **EdF (Electricité de France)** ..... FRANCE
- **Det Norske Veritas** ..... NORWAY
- **Lloyds Register** ..... U.K. (Worldwide)
- **Building Research Establishment** ..... U.K.
- **Loss Prevention Council** ..... U.K.
- **UL (Underwriters Laboratories)** ..... U.S.A.
- **FM (Factory Mutual)** ..... U.S.A.
- **ABS (American Bureau of Shipping)** ..... U.S.A.

## Working With DURASTEEL®

### Quality Assurance

Intumex Asia Pacific has always been committed to the highest standards of quality. Our DURASTEEL® board manufacturing and production systems operate under a rigorous quality management system, independently certified as complying with BS EN ISO 9000. This provides specifiers, contractors and end users with an independent assurance of our continuous quality control of production.

### On-site Quality Control

Intumex Asia Pacific will provide a full technical back up to the (sub) contractor both on and off site. This will include assistance in the form of providing written confirmation of construction details, together with drawings where required. Please note however that this refers only to specific detail drawings and does not relate to the provision of the shop drawings unless otherwise agreed.

Intumex Asia Pacific will visit site on a frequency to be agreed between ourselves, the (sub) contractor and the main contractor to ensure that installation is proceeding in accordance with our recommendations.

### Composition & Manufacture

DURASTEEL® is a composite panel of fibre reinforced cement, mechanically bonded to punched steel sheets on both faces. DURASTEEL® is non combustible and is classified as a Class 0 material.

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# Working With DURASTEEL®

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previous page*

## Health & Safety

No special precautions are necessary in handling or working boards. When using power saws or sanders in a confined space, dust extraction equipment is recommended to control dust levels.

DURASTEEL® will support its own weight and also can be used in load bearing situations; please consult Intumex Asia Pacific Technical Services Department for advice. Installers must ensure that they work from adequate and safe platforms where necessary.

Health and Safety data sheets are available.

## Handling & Storage

Carry boards on edge, and do not drop on their corners or on to trestles. All products should be stored under cover on a flat base, clear of the ground. If stored in the open, the stack should be fully protected from the weather. If stored on racks or dunnage, boards should be fully supported across their width at not more than 1m centres.

## Maintenance & Cleaning

Boards do not normally require any maintenance in use. DURASTEEL® boards will not crack or deteriorate with normal usage, as it is the most rugged board product available within the passive fire protection market. DURASTEEL® boards can be degreased with a mild solvent should painting or plastering be required (see [Decorating](#)).

## General

Care should be taken to prevent injury from sharp edges and corners. Do not leave boards lying about on site, on scaffolding or in high traffic areas, where risk of damage or injury is increased, and prevent any misuse which could result in personal injury or damage to boards. In the event of injury, obtain proper treatment. The materials and the packaging used for distribution do not incorporate any substances considered to be hazardous to health.

## Working

### CUTTING & SAWING

Use a jig saw with a coarse blade. Diamond dusted blades are available in some countries and will assist in prolonging the life of the blades. In general, cutting with a jigsaw is only suitable for small cuts, e.g. scribing around services etc.

For long cuts, a jigsaw blade can be used, but has limitations on its effectiveness, short life span of jigsaw blades is an issue and straightness of cuts. For many long cuts, use a grinder or a guillotine if available. Note that when cutting boards with a grinder, the edges are extremely sharp and thus extra care should be taken to avoid cutting of hands etc. See below for details on dressing of edges.

Always wear suitable eye and hand protection. Ideally, masks should be worn to prevent inhalation of dust.

### DRILLING

Use a hand drill or high speed power drill (not the percussion type); bits should have HSS tips and should be suitable for drilling steel and/or fibre cement. Always wear suitable eye and hand protection. Ideally, masks should be worn to prevent inhalation of dust.

### EDGE TREATMENT

A file or grinder can be used to remove sharp or burred edges due to cutting of the sheets. Care should be taken not to remove large areas of the galvanised coating as this could possibly lead to corrosion of the steel. When cut, edges do not need to be coated in order to provide additional protection as galvanic reaction will prevent corrosion of edges. However, this does depend on the location of the system and its exposure to inclement conditions. Please consult Intumex Asia Pacific if in any doubt. Always wear suitable eye and hand protection. Ideally, masks should be worn to prevent inhalation of dust.

## Decorating

### PLASTERING

If a skim finish is desired, it will be necessary to apply a grid of expanded metal lathing to provide a key for plaster or sand and cement render. Please consult Intumex Asia Pacific for specific recommendations.

### PAINTING & DECORATING

Any conventional paint can be used. Alkali resistant primers are not necessary. Water based paints (with a watered down first coat) or oil based paints can be applied to all products using proprietary primer/top coat systems as recommended by paint manufacturers. DURASTEEL® should be de-greased with a solvent based cleaning agent. All paints should be compatible with application to:

- 1) the galvanised steel facing, and
- 2) the core material has a high alkali content.

At all times the recommendations of the paint manufacturer should be followed.

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