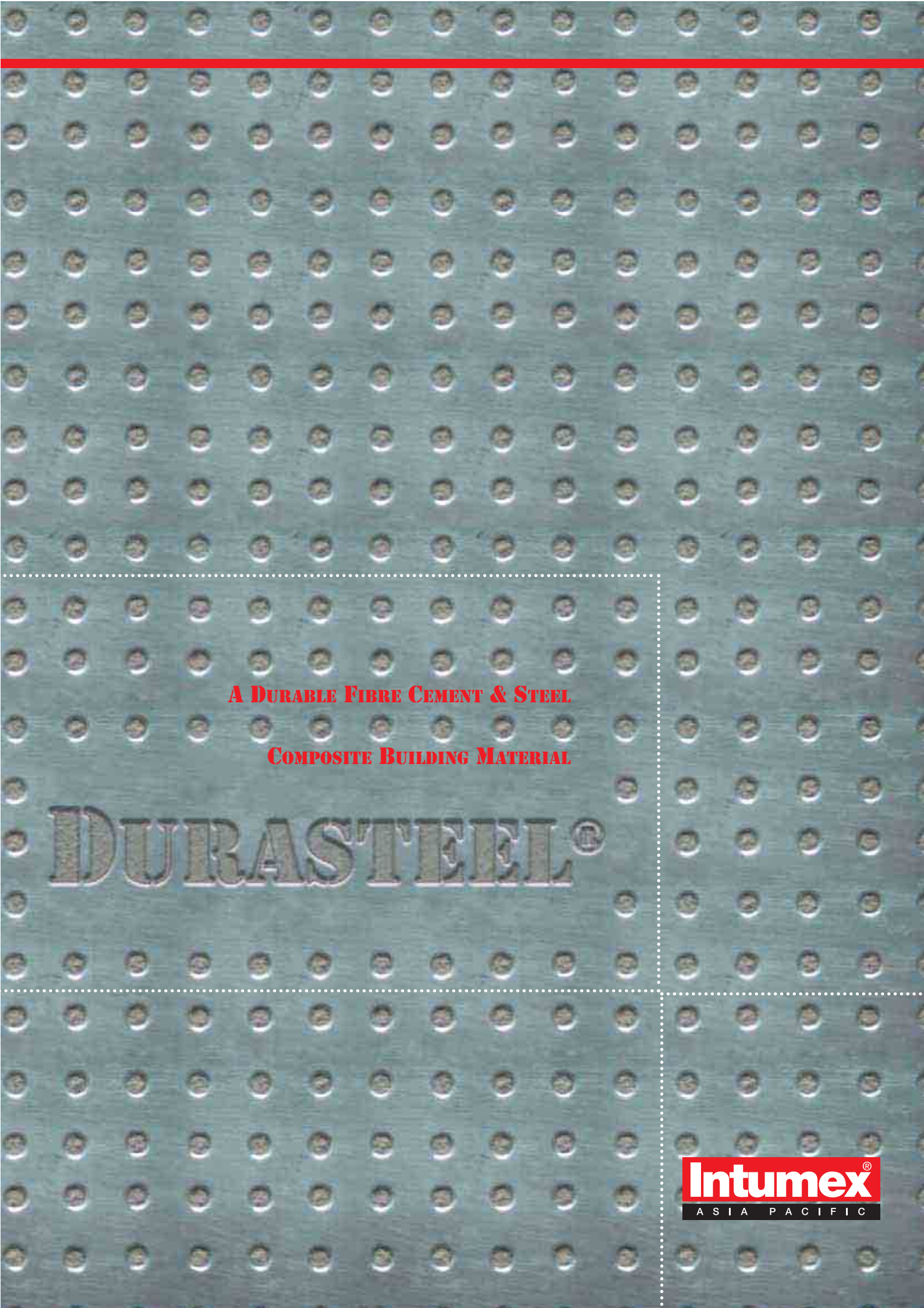

A Durable Fibre Cement & Steel
Composite Building Material
DURASTEEL®
Intumex®
ASIA PACIFIC

As one of the leading suppliers of fire protection products and systems world wide, Intumex Asia Pacific are acutely aware of the importance of product quality and consistency. These factors are critical for all fire protection products and systems as peoples lives may depend on them.

First produced in 1934, DURASTEEL® became part of our product range in 1980. As one of the world leaders and specialists in passive fire protection, Intumex Asia Pacific have been instrumental in protecting life, the environment and financial investment, and as such offers systems that are technically advanced and value-engineered to meet today s market needs.

We have used our specialist technical and engineering skills to develop fire and blast protection for some of the worlds most valuable industries. These include major projects for nuclear power plants, gas terminals, offshore production platforms, chemical processing plants and refineries. DURASTEEL® passive fire and explosion resistant systems combine to fortify and protect vulnerable and hazardous areas to minimise the possibility of major disaster.

We, as a company, do not just manufacture products, rather we provide a comprehensive service to achieve the best solution to specific fire or blast protection problems.

We can offer advice at the design stage, provide construction detailing and where necessary, special project orientated product and system testing which will enable the manufacture of custom built solutions, tailored to your needs.

Our commitment to quality and to continual product and system research, development and testing enable you to specify DURASTEEL® systems with confidence.

All Intumex products, therefore, are manufactured under accredited EN ISO 9000 quality assurance procedures, and our products and systems are extensively tested to all relevant national standards for fire and impact resistance, and acoustic and thermal insulation.

The information in this document is issued in good faith. Intumex Asia Pacific can accept no responsibility for omissions or errors in content or interpretation. Intumex Asia Pacific has a policy of continuous improvement and reserves the right to change specifications, designs and products at any time without prior notice. Local authorities must be consulted for compliance with local building fire regulations.

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Durasteel

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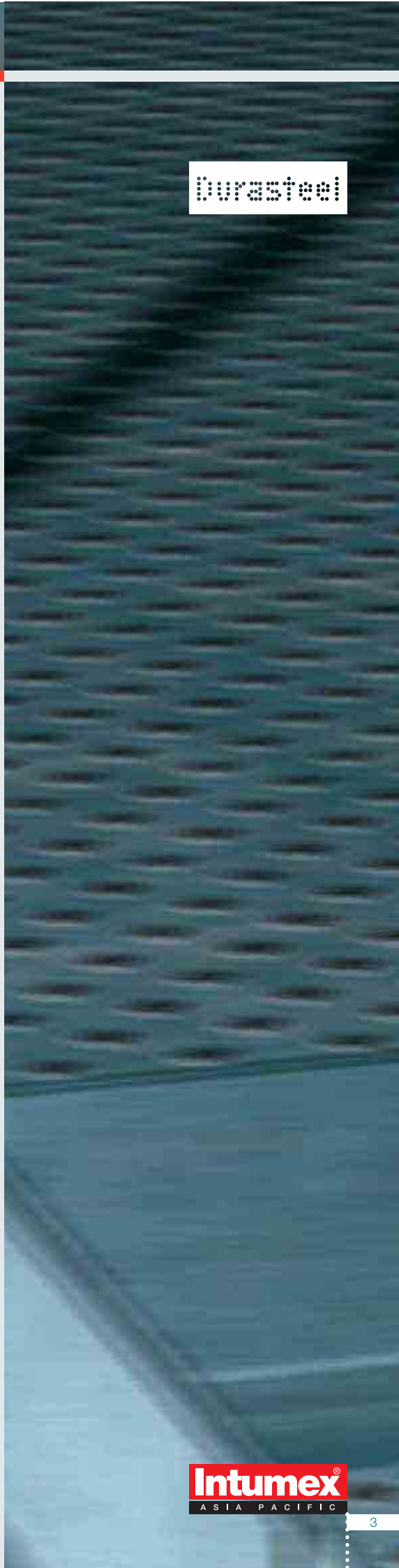
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Durasteel® is a composite panel of fibre reinforced cement mechanically bonded to punched steel sheets on both surfaces. It is classified as non-combustible in accordance with many national and international standards and is highly resistant to moisture even when saturated. It will not absorb combustible fluids and its fire resistant qualities are exceptional.

Durasteel® is highly impact and blast resistant, which enables it to withstand prolonged exposure to fire of the cellulosic, hydrocarbon or jet fire types. It can also withstand hose-stream actions and, because of its very low moisture absorption, it can be used externally and is not susceptible to the damage often caused by moisture during the early stages of delivery and installation of the system, or by sprinkler actuation.

Durasteel® is a fit and forget system, which requires virtually no maintenance.

# Features/Advantages of Durasteel®

- Strong.
- Impact resistant.
- Moisture resistant.
- Maintenance free.
- Requires no foundations.
- Space saving.
- Engineered for fast track construction.
- Flexible installation.
- Offers up to 6 hours fire protection.
- Lightweight.
- Employs only dry trade installation methods.
- Relocatable and suitable for retro-installation.
- Proven 40-year design life.
- Tested to Hose Stream ASTM E119 to 5-bar pressure.
- Tested to DIN 4102 to 4000J hard body impact after fire test.
- Ducting available in 1, 2, 3 or 4-sided configurations with internal or external flanges, with up to 4 hours fire resistance.
- Non-combustibility with zero spread of flame.
- Non-toxic.
- Man made mineral fibre free.
- Modular or kit form construction.
- Loadbearing and non loadbearing constructions.
- Resistant to the most onerous fire curves, e.g. Hydrocarbon, Jet fire etc.

# Typical Applications

## Ventilation ducts:

- Smoke extract ducts
- Kitchen extract ducts
- Cable protection ducts
- Service ducts



## Ceilings:

- Plenum chambers
- Loadbearing ceilings
- Membrane ceilings
- Suspended ceilings
- Lift or service shaft cappings



## Walls:

- Partitions
- Service shafts
- Lift enclosures
- Cavity barriers



## Industrials:

- Valve box enclosures
- Switch gear enclosures
- Doors
- Escape tunnels
- Storage systems
- Hatch covers
- Fuel pipe protection



Durasteel

# General Technical Data

| THICKNESS TYPE | Durasteel® 6.0mm | Durasteel® 9.5mm |
|---|---|---|
| SIZES | 2500mm x 1200mm / 2400mm x 1200mm | 2500mm x 1200mm / 2400mm x 1200mm |
| NOMINAL BOARD WEIGHTS AT AMBIENT CONDITIONS | 16.8 kg/m$^2$ | 21.0 kg/m$^2$ |
| THICKNESS TOLERANCE | +1.5 to -0.0 mm | +1.0 to -1.0 mm |
| LENGTH TOLERANCE | +2.0 to -2.0 mm | +2.0 to -2.0 mm |
| WIDTH TOLERANCE | +2.0 to -2.0 mm | +2.0 to -2.0 mm |
| FLEXURAL STRENGTH (BS EN 12467:2000) | 109 Mpa | 84 Mpa |
| FLEXURAL MODULUS (BS EN 12467:2000) | 55 Gpa | 40 Gpa |
| IMPACT STRENGTH (BS 5669: Part 1 / 1500mm drop) | No failure | No failure |
| IMPACT RESISTANCE (Projectile) | 2793 J | 2793 J |
| EFFECT OF 4000J HARD BODY IMPACT TEST AFTER FIRE TEST DIN 4120: Part 3 | | Pass |
| BENDING STRENGTH (BS 5669: Part 1: 1989) | >189.5 N/mm$^2$ | >189.5 N/mm$^2$ |
| NATURAL MOISTURE CONTENT BY WEIGHT | 6% | 6% |
| MOSITURE ABSORPTION (Weight from NORMAL MOISTURE CONTENT) | 6~7% | 6~7% |
| MOISTURE MOVEMENT (35~85% RH) (BS EN 318: 2002) | ≤ 0.2% | ≤ 0.2% |
| MOISTURE MOVEMENT (65% RH to saturated) (BS EN 318: 2002) | ≤ 0.2% | ≤ 0.2% |
| WATERTIGHTNESS (BS 4624: 1981) | Pass | Pass |
| FIRE RESISTANCE AFTER 24 HOURS WATER IMMERSION (BS 476:Part 24: 1987) | | Satisfactory |
| THERMAL CONDUCTIVITY AT 20°C (ASTM C518: 1991) | | 0.129 W/m°K |
| COEFFICIENT OF THERMAL EXPANSION (BS 1902: 1990) | | 15 x 10$^{-6}$ k$^{-1}$ |
| MAXIMUM CONTINUOUS OPERATING TEMPERATURE (BS 7346: Part 2: 1990) | 350°C | 350°C |
| RADIANT HEAT REDUCTION THROUGH PANEL | 9.30-2.53 (2948.0-802.0 Btu/ft h°F) | 9.30-2.53 (2948.0-802.0 Btu/ft h°F) |
| SOUND REDUCTION INDEX | 28.0 dB | 29.7 dB |
| NON-COMBUSTIBLE (BS 476: Part 4: 1970) | Yes | Yes |
| MATERIAL OF LIMITED COMBUSTIBILITY | Yes | Yes |
| BUILDING REGULATIONS CLASSIFICATION | Class 0 | Class 0 |
| SPREAD OF FLAME (BS 476: Part 7: 1987) | Class 1 | Class 1 |
| BBA (British Board of Agrément) CERTIFICATION NUMBER | 93/2929 | 93/2929 |
| AIRFLOW | Equivalent to Sheet Metal Ducting. | |
| SHEET FINISHES | Galvanised mild steel or stainless steel. | |
| SYSTEMS FINISHES | Galvanised steel or primed steelwork (special finished available upon request). | |
| DOORS FINISHES | Galvanised steel or primed steelwork (special finished available upon request). | |

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