

The Passive Fire Protection Handbook

Chapter 2: User Guide - Promat DURASTEEL®

APPLICATIONS

- Ductwork and smoke extraction
- Service enclosures
- Walls, partitions, service shafts, lift enclosures, cavity barriers and smoke plenums
- Membrane ceilings and plenum chambers
- Industrial, valve box enclosures and fuel pipe protection
- Fire doors



GENERAL DESCRIPTION

Promat DURASTEEL® is a non-combustible composite panel of fibre reinforced cement mechanically bonded to punched steel sheets on both surfaces.

Promat DURASTEEL® has been developed and supported through rigorous testing for use in partitioning, ducting, door and ceiling applications, with a wide range of specifications available.

Promat DURASTEEL® systems combine lightweight, strength, impact resistance and durability with exceptional fire resistance. These systems remain resistant to fire fighters' hoses, leaving them capable of performing their original function even in the aftermath of a fire. Promat DURASTEEL® systems have been used successfully for many years, including rail and metro projects, airports, military developments and in commercial, pharmaceutical and petrochemical facilities.

A safety data sheet is available from the Promat Technical Services Department and, as with any other materials, should be read before working with the board. The board is not classified as a dangerous substance and so no special provisions are required regarding the carriage and disposal of the product to landfill. They can be placed in an on-site skip with other general building waste which should be disposed of by a registered contractor.

Table 2a Typical Mechanical Properties

Flexural strength $F_{rupture}$	6mm	Average, dry	N/mm ²	109
	9.5mm	Average, dry	N/mm ²	84
Modulus of elasticity E	6mm	Average, dry	N/mm ²	55,000
	9.5mm	Average, dry	N/mm ²	40,000

Table 2b General Technical Data

Material class	Non-combustible		
Surface spread of flame	Class 1		
Building Regulations classification	Class 0		
Alkalinity (approximately) pH (core)	10-13		
Thermal conductance (approximately) at 20°C W/m ² K	60 (9.5mm)		
Coefficient of expansion (20-100°C) m/mK	15 x 10 ⁻⁶ (9.5mm)		
Nominal moisture content (air-dried) %	6		
Moisture movement (ambient to saturated) %	-		
Thickness tolerance of standard board	6mm	+1.5 to -0.0	
	9.5mm	+1.0 to -1.0	
Length x Width tolerance of standard boards mm	± 2.0		

Table 2c Board Format Data

Thickness (mm)	Length x Width (mm)	Approx. Weight (kg/m ²)	
		Dry	With approximately 6% moisture
6	2500 x 1200	15.9	16.8
	2000 x 1200	19.8	21.0
9.5	2500 x 1200	19.8	21.0
	2000 x 1200	19.8	21.0

NOTE: All physical property values are averages based on standard production. The figures can change dependent on the test methods used. If a particular value is of prime importance for a specification, please contact Promat Technical Services Department.