DUROCK® Brand Next Gen e+ Cement Board

Exterior Façade Solutions

Seamless Façade & Curtain Walls

Wet Area Application | Dry Cladding | False Ceiling

USG BORAL
INNOVATION INSPIRED BY YOU.™

Introduction

Boral Gypsum and USG Corporation have come together to form a market leader across Asia, Australasia and the Middle East, transforming the two companies into a world-leading building products business, USG Boral Building Products (USG Boral).

At USG Boral, we believe the best innovations start with a purpose – a focus on why the innovation is needed and who will benefit from it. Our focus is to deliver innovations that help you work smarter, do more, and build better. Through an ever-growing portfolio of groundbreaking products backed by unparalleled service, we empower our customers to build their business, much the same way you build cities and communities the world over. We've done so by investing in purposeful innovation, expanding into different markets and constantly searching for ways to increase performance and productivity.

This commitment to innovation and focus on you, our customer, is inspired by a desire to enable architects, contractors and workers alike to improve the way we live by changing the way buildings are designed and built.

DUROCK® Brand Next Gen e+ Cement Board

The DUROCK® Brand Next Gen e+ Cement Board is manufactured with Portland cement based core, and laminated with a polymerized fiberglass mesh on both sides.

The long edges of panels are tapered, allowing joints to be reinforced and concealed with DUROCK® joint treatment systems and short edges are square. Rough exterior face to facilitate adhesion of the DUROCK® Basecoat Compound.

It will not suffer damage due to deterioration, warping, delaminating, or disintegrate when exposed to direct water contact for a long period of time. DUROCK® Brand Next Gen e+ Cement Board is installed on metal studs to form interior or exterior assemblies such as dividing walls and soffit, prefabricated components for curtain walls, facades, protective wall coverings, substrates for sinks or integral kitchens, decorative elements like columns, lintels, etc.

DUROCK® Brand Next Gen e+ Cement Board

DUROCK® Brand Next Gen e+ Cement Board have the necessary flexibility to sheath curved elements. Once the joints are taped many finishes, including tiles can be utilized to complete the DUROCK® Exterior System. Moreover, the resistance of DUROCK® Brand Next Gen e+ Cement Board to water damage makes it the ideal material for walls and interior false ceilings in humid areas.

The DUROCK® Exterior System has been selected for use in many building types in North America. In the US and Mexico alone, more than 40 million square meters of this system has been installed. This system provides excellent performance for your exterior needs.

Its light weight and ease of cutting and installation make it a more efficient application for exterior coverage for houses, condominiums, hospitals, schools, malls, retailers and most types of commercial buildings.

Features

High strength
High flexural strength helps resist cracking.
High indentation strength to resist impact damage.

Dimensional stability
Low thermal and hydrometric movement helps resist cracking.

Dual surface
Rough surface enhances bonding. Reduces tile slip with mortar applications.

Light weight
Board Weight is 13.25 kg/sq m

Performance
Cavity wall construction helps in energy savings, building acoustics and Fire resistant assemblies.

Water durable
Will not swell, soften, decay, delaminate or disintegrate in water.
Humidity & moisture resistant.

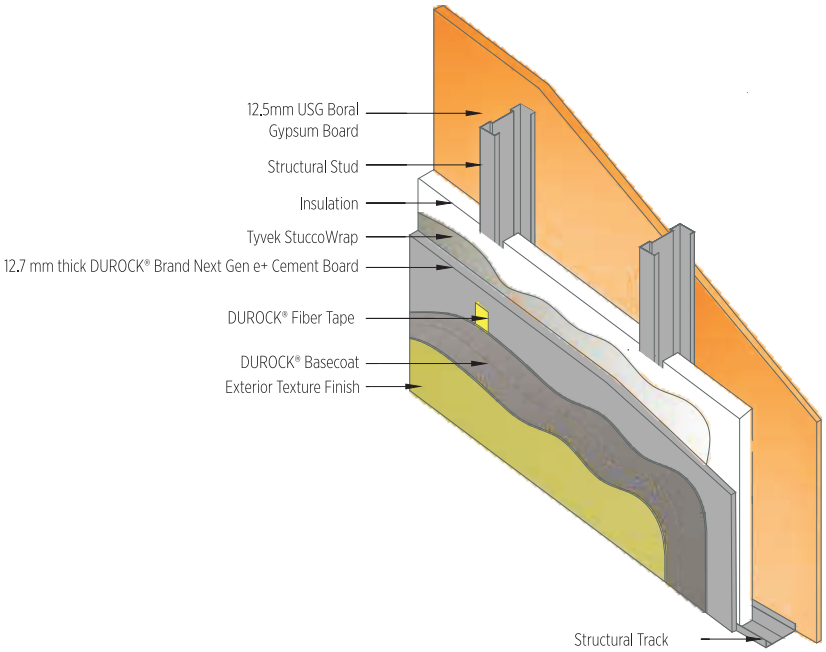
Safety
Safe & hygienic materials resistant to mold and mildew.
Scores a 10 out of 10 as per ASTM D3273 standard for resistance to mold growth.

Easy installation
Easy to cut and fasten. Dry panel application eliminates cement mixing and drying time.
Speedy construction and lowering in-place cost.

Versatility
Unlimited designs with numerous finishing options to suit architects imaginations.

DUROCK® Brand Next Gen e+ Cement Board Exterior Wall System

Direct Exterior Finish System



Description	Product Data
Thickness	12.7 mm
Flexural Strength	52.7 kg/sq cm
Water Absorption	15% of its weight
Nail-pull Resistance	57 kg
Weight	13.25 kg/sq m
Mold Resistance	No Growth
Non-combustibility	Approved
Flame Spread Index	0
Smoke Developed Index	0
Thermal Conductivity (K)	1.92 Btu-in/oF-ft2-h

Why Exterior Drywall with DUROCK® cement board NEXT GEN e+?

	DUROCK® Brand Next Gen e+ Cement Board	Conventional System
Material Source	USG Boral	Different sources
Construction Techniques	Dry construction	Wet construction
Design Flexibility	Up to 6 feet minimum bending radius.	Curves can be achieved by making Formwork of desired shape. Highly labour intensive.
Speed	Building envelope work can start on the floors below while slab casting of top floors is in progress. This leads to faster completion of interior work resulting in early rental income or revenue generation.	Interior work can only begin when the wet construction is over.
U value	Lower U value results in energy savings.	High Air-conditioning & heating costs.
Slim Wall	Increased carpet area.	Less carpet area.
Weight	DUROCK® wall is approx. 55 to 65 kg/sq m	Approx. 400 kg/sq m
Acoustics	125 mm DUROCK® wall is estimated to offer 50 STC with insulation in cavity. Ideal for Residential, Hospitals, Hospitality, Education & other Sensitive Buildings.	230 mm thick wall is estimated to offer up to 40 STC.
Fire Resistance	UL approved fire resistant assemblies upto 2 hours	No certified data
Seismic Protection	It is ideal for earthquake prone zones & high rise buildings because of its low dead weight. System being ductile in nature it can take large deformations & has less potential for damage in the case of failure.	Due to heavy weight are quite stiff which can lead to early failure.
Refurbishment	Face lifting, change in elevation of existing structures can be carried out without any major structural changes. Additional floors can be added. Acoustics & fire performances of the existing building envelopes can be easily enhanced.	Additional Reinforced concrete is required to undergo change in elevation etc.

Components

DUROCK® Fiber Tape

DUROCK® Fiber Tape is made of polymerized fiberglass mesh. It embeds into DUROCK® Basecoat or DUROCK® Baseflex for joint treatment.

100 mm and 228 mm wide.

DUROCK® Basecoat

DUROCK® Basecoat Joint Compound is a mix of Portland cement, additives and latex polymers. For joint treatment, to cover plastic components and as a Basecoat for the entire surface, before applying final exterior paint.

22.7 kg per bag

Coverage:
For a layer of maximum 2 to 3 mm thickness, 4 to 5 kg/sq m.

DUROCK® Baseflex®

DUROCK® Baseflex® is an alternative for joint treatment and as a Basecoat cover for the entire surface before applying before applying final exterior paint. It is also recommended as an adhesive for ceramic tiles.

22.7 kg per bag

Coverage:
For joint treatment and finish: for a layer of maximum 3 to 4 mm thickness, 4 to 5 kg/sq m.

Tyvek® StuccoWrap®

It is a weather resistant barrier for DUROCK® Brand Next Gen e+ Cement Board Exterior Wall System.

1.53 m wide, 61 m long

Water Barrier Tape

A polyethylene-film coated, self-sealing modified and vitumenous tape that is primarily used to seal window sills to the building paper prior to the installation of the windows. The tape is self-adhesive with a disposable silicone treated release sheet.

Thickness: 0.7 mm.

Metal Profile

Rondo Metal Systems:
Hot dipped in aluminum & Zinc, coated with minimum coating thickness of Az150. Min Yield 250 Mpa.
Depth : Wall Studs 92 mm , 125 mm & 150 mm.

Two thickness: 0.90 mm & 1.15 mm.

TEK Screw

12.7 mm TEK Screw
For affixing metal studs to 0.9 mm structural track, and other metal components in thickness ranging from 0.9 mm to 2 mm.

DUROCK steel screws

DUROCK steel screws in 32 mm, 41 mm and 58 mm with corrosion resistant ceramic coating for securing DUROCK® Brand Next Gen e+ Cement Board panels to metal framing of 0.9 mm to 2 mm.

PVC Accessories

PVC accessories for DUROCK® Brand Next Gen e+ Cement Board system resist cement alkalinity conditions, weather, UV rays and the various factors that external systems are exposed to. They come in lengths of 3.05 m and are fixed to the system with screws that are hidden during the joint treatment process.

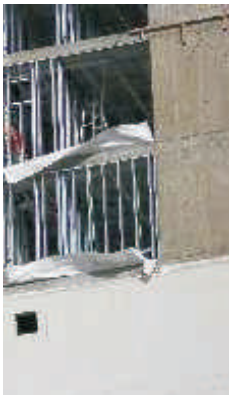
Façade Types

Curtain Walls

This kind of walls are used on buildings over 3 stories high. The frame is offset from the slab level. The curtain wall is secured to the main structure & all metal components required has to be determined by the structural engineer.

Slab to Slab Construction

This wall system is used on buildings less than 3 stories high. All the frames have to be anchored to each slab.

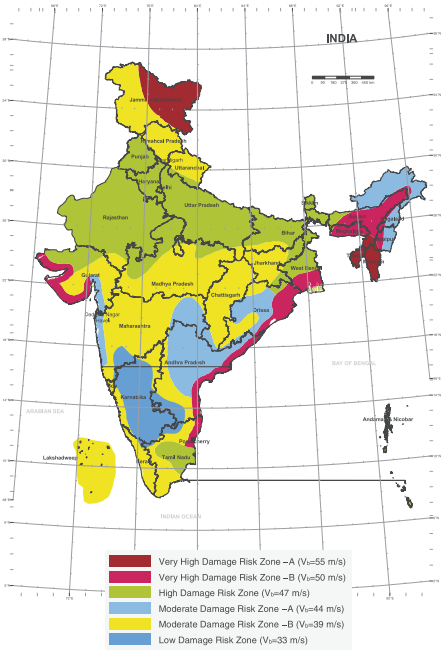


Design Considerations

The most important factor when designing a facade is the force produced by the wind, acting as a uniform load.

This wind force varies according to the location of the Project. As per IS 875 (Part 3) based on the wind speed worked out for a 50 year return period, regions have been classified under 6 wind zones.

Zone 1 has lowest wind speed of 33 m/s, whereas Zone 6 has clocks up to 55 m/s.



Terrain Category

Based on the surrounding area and effect of obstruction which constitute the ground surface roughness areas are classified into

Category 1: Areas close to seashore.

Category 2: Open terrain with well scattered obstructions upto 1.5 -10 m height.

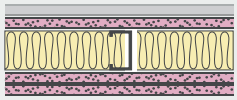
Category 3: Areas with closely scattered buildings/obstruction upto10 m height.

Category 4: Areas with large and closely spaced obstructions.

Parameters

Metal Framing of minimum 0.90 mm thickness
Studs spacing: 406 mm max
Maximum Deflection Criteria: L/360

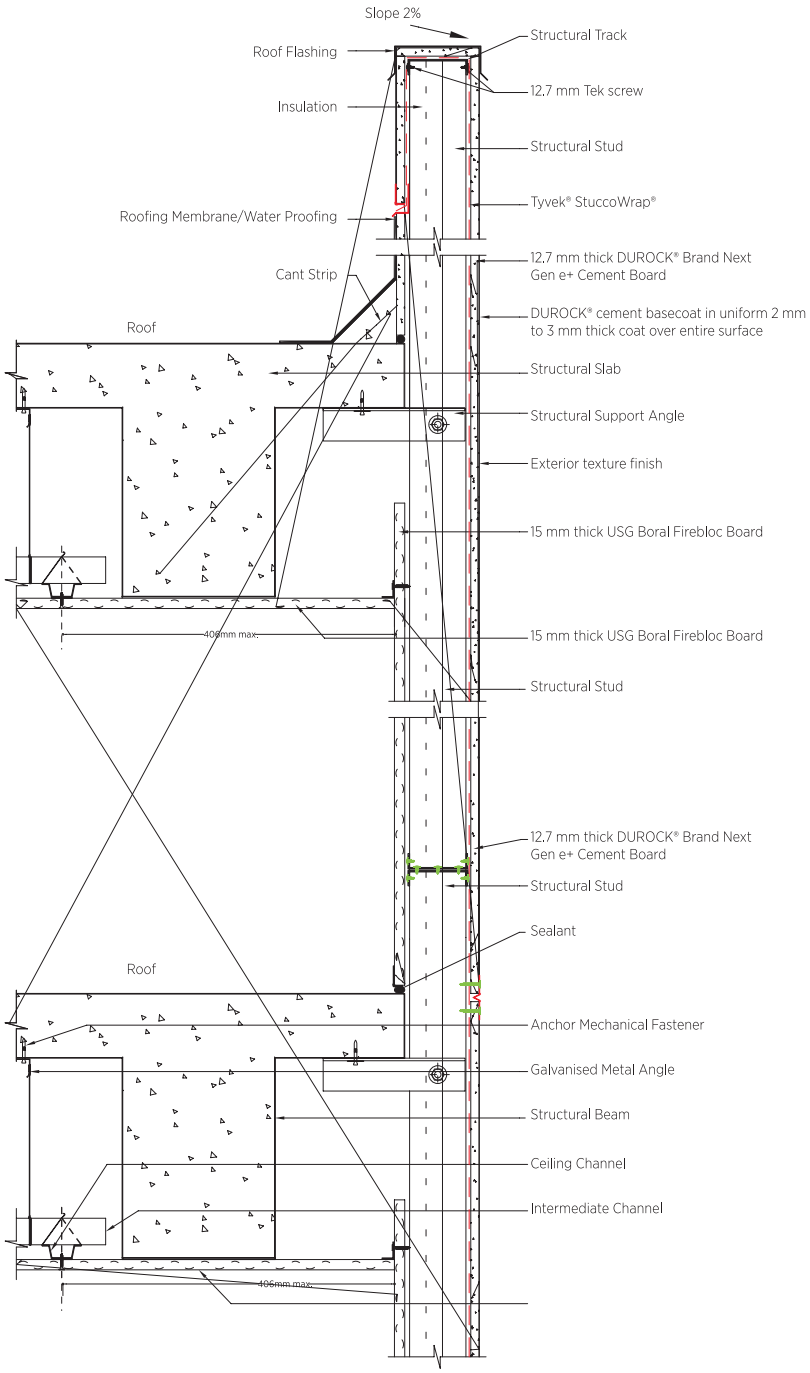
DUROCK® Brand Next Gen e+ Cement Board Exterior wall Assemblies

Sr No	Construction Detail	Description	Overall Thickness (mm)	Sound Insulation	Fire Resistance (minutes)
1.		12.7 mm thick DUROCK® Brand Next Gen e+ Cement Board are screw fixed on exterior side of 92 mm studs (0.90 mm minimum) and 15 mm thick USG Boral FireBloc boards on the interior side having 75 mm insulation in cavity. The Exterior panels are finished with 2 to 3mm DUROCK® Basecoat. Finally exterior paint to be applied on the exterior surface. Tyvek® StuccoWrap® shall be provided over the metal framing as required.	125	43 STC	60
2.		12.5 mm thick USG Boral WR FireBloc boards is screw fixed on exterior side of 92 mm studs (0.90 mm minimum) and second layer of 12.7 mm thick DUROCK® Brand Next Gen e+ Cement Board are fixed over FireBloc boards and are secured to the metal studs. 2x15 mm thick USG Boral FireBloc boards are fixed on to the interior side of metal studs having 75 mm insulation in cavity. The Exterior panels are finished with 2 to 3mm DUROCK® Basecoat. Finally exterior paint to be applied on the exterior surface. Tyvek® StuccoWrap® shall be provided over the metal framing as required.	147	46 STC	120

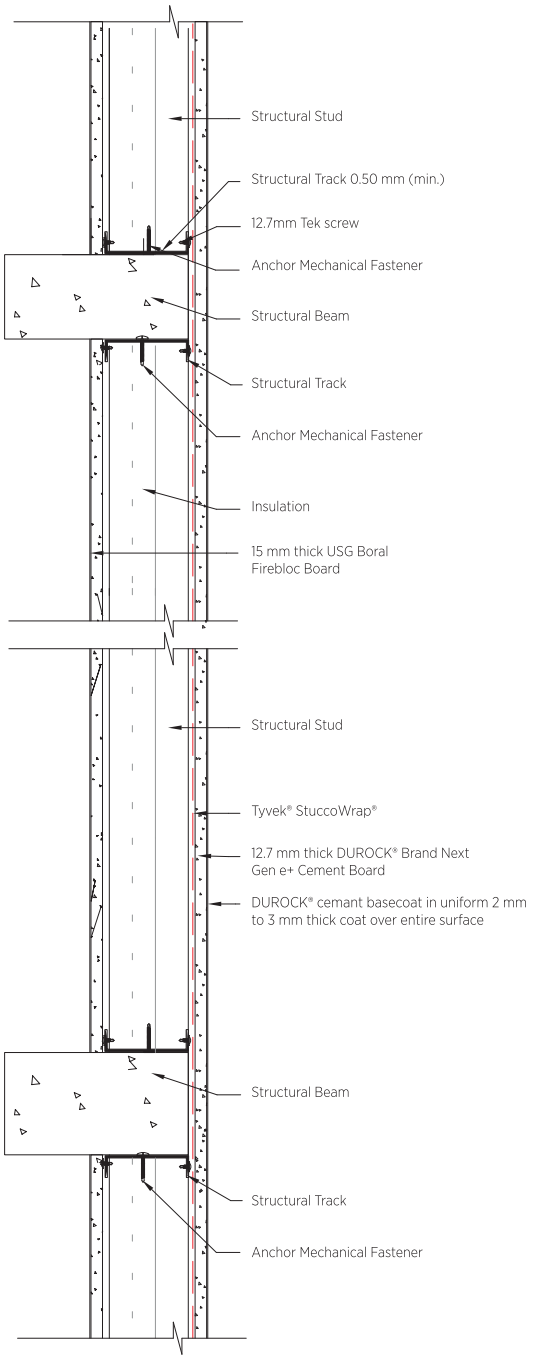
Note:
1. Sound insulation (STC Values) and fire resistance are based upon estimated values.
2. USG Boral can offer solutions to suit your project requirements. For details, you may please contact your local USG Boral representative.

Façade Types

Exterior wall (curtain wall construction)



Exterior wall (slab to slab wall construction)



Note :
Sound Insulation (STC) & Fire Resistance (min) are estimated values only.
USG Boral can offer solutions to suit project requirements. For more details you may please contact your local representative.

Exterior Wall Specification

Supplying and fixing of 125 mm thick USG Boral exterior wall system components.

This includes fixing of floor and ceiling track (0.55 mm min, 92 mm wide & having two flanges of 29 mm each) to the RCC floor and slab with approved fasteners @ 600 mm centers respectively. The wall studs (0.9 mm min, 92 mm wide having flanges of 34 mm) are placed at 406 mm centers in floor and ceiling tracks with first & last studs secured vertically to the wall/RCC with approved fasteners @ 600 mm centers. These wall studs are also secured to the floor channel with pan head metal to metal screws on both sides. A horizontal nogging is secured with metal to metal screws at 2.44 m from the floor to secure the board joints.

Tyvek® StuccoWrap® shall be applied on to the entire exterior wall frame in such a way so as it gets embedded in the floor & ceiling track.

Then 12.7 mm thick DUROCK® Brand Next Gen e+ Cement Board exterior wall (confirming to ASTM C 1396) is screw fixed to exterior side of wall studs with 32 mm long DUROCK® screws at 200 mm centers. The screw fixing of DUROCK® panels to the metal framing at the periphery, openings and cut edges should be at 150 mm centers. All joints of DUROCK® Brand Next Gen e+ Cement Board shall be taped & finished with 150 mm wide DUROCK® Fiber Tape & DUROCK® Basecoat. Finally 2 to 3 mm thick DUROCK® Basecoat shall be applied on to the entire surface.

15 mm thick USG Boral FireBloc boards are screw fixed vertically to interior side of wall studs with 32 mm drywall screws at 300 mm centers. The screw fixing of gypsum panels to the metal framing at the periphery, openings and cut edges should be at 150 mm centers. The horizontal & vertical joints of the gypsum panels must be staggered so as to avoid through and through joints. All joints to be taped & finished with 50 mm wide USG Boral brand paper tape & USG Boral All Purpose Joint Compound confirming to ASTM C475.

Backer rod along with fire & acoustical sealants shall be applied on the periphery of both sides of the wall. All openings & cut outs shall be sealed with fire resistant sealants.

Note:

The above is a general specification for the DUROCK® Brand Next Gen e+ Cement Board exterior wall.

Under construction

DUROCK® Brand Next Gen e+ Cement Board after finishing

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