ENVIROCRETE® PLUS

Higher carbon reduction with improved durability in aggressive environments

ENVIROCRETE® PLUS delivers greater embodied carbon reduction than standard ENVIROCRETE®, with enhanced durability suited to more demanding exposure conditions.

Engineered for stronger protection against chloride ingress and sulphate attack, ENVIROCRETE® PLUS is appropriate for marine-adjacent structures, retaining walls, civil works and projects requiring extended service life.

It provides improved shrinkage control and long term performance where durability is a key design requirement.



ENVIROCRETE® PLUS

ENVIROCRETE® PLUS has good early age strength and can be used for some post tensioned applications.

It also has good drying shrinkage characteristics which will comply with the shrinkage requirements in most engineering specifications.

Product Details

Boral's ENVIROCRETE® PLUS concrete is a low carbon concrete product which complies with AS 1379.

ENVIROCRETE® PLUS contains supplementary cementitious materials to reduce the portland cement and the minimum reduction in portland cement coMPared to the GBCA and ISC reference case is 45%.

ENVIROCRETE® PLUS also has enhanced engineering properties coMPared to the ENVIROCRETE® range. The early age strength and drying shrinkage are superior to ENVIROCRETE®.

ENVIROCRETE® PLUS

Features and Benefits

- Low portland cement.
- Low embodied carbon.
- Low drying shrinkage.
- Good early age strength, suitable for most standard post tension applications.
- Suitable for projects targeting a GBCA[1] or ISC[2] rating
- Improved early age strength and drying shrinkage compared to the ENVIROCRETE® products.

Environmental properties

Reduction in portland cement[3]	≥ 45%
Reduction in portland cement[3] (Typical range)	45% - 70%*
Reduction in embodied carbon[4]	Up to 50%

* subject to technical review and local availability.

Typical GWP reduction (AUSLCI)[5]

NSW - Sydney	34.5%
VIC - Melbourne	26.1%
QLD - Brisbane	37.5%
WA - Perth	35.7%
SA - Adelaide	49.7%

Engineering and durability properties

Early age strength	● ●
Drying shrinkage	● ● ●
Durability in a marine environment	● ● ●
Patented ZEP™ activator	ZEP™ Activator Technology

Legend: ● Good ● ● Very Good ● ● ● Excellent ● ● ● ● Superior

ENVIROCRETE® PLUS

Applications	
Standard Mixes - Footpaths, house slab, driveways and others	■ ■
Piling - All types of piling	■ ■ ■
Columns - Vertical applications	■ ■ ■
Wall/Stairs - All wall applications	■ ■ ■
Blockfill - Blockfill / Corefill	■ ■
PT Slabs - Post Tension / High early strength	■ ■
Precast - High early strength	■ ■
Shotcrete - All shotcrete mixes	■ ■ ■
Footing - General footing mixes	■ ■ ■
Colour Mixes - Boral Colori® mixes	■ ■
Exposed - Exposé® range	■
Polished - Boralstone® range	■ ■ ■
Tilt-up - Cast insitu / high early strength	■ ■
Slipform / Jumpform - High early strength	■ ■
High Strength - up to 65MPa	■ ■ ■
Industrial Flooring - Warehouses / Factories	■ ■ ■
Other Applications	High Slump Shotcrete/Poolmix

Legend: ■ Good ■■ Better ■■■ Best

Compliance	
AS 1379 Specification for Basic Assessment	Complies
Compressive Strength (MPa)	20MPa - 80MPa

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20MPa	
Compressive Strength - 1 day (MPa)	~ 5
Compressive Strength - 7 days (MPa)	~18
Compressive Strength - 28 days (MPa)	20
Dry Shrinkage - microstrain (50% RH) - 56 days	<600
Nominal Dry Shrinkage - microstrain (50% RH) - 56 days	550
Maximum Dry Shrinkage - microstrain (50% RH) - 56 days	600
Post tensioned applications (MPa@days) - 22MPa @ days	N/A
Post tensioned applications (MPa@days) - 25MPa @ days	N/A

32MPa	
Compressive Strength - 1 day (MPa)	~ 8
Compressive Strength - 7 days (MPa)	~25
Compressive Strength - 28 days (MPa)	32
Dry Shrinkage - microstrain (50% RH) - 56 days	<600
Nominal Dry Shrinkage - microstrain (50% RH) - 56 days	550
Maximum Dry Shrinkage - microstrain (50% RH) - 56 days	600
Post tensioned applications (MPa@days) - 22MPa @ days	22MPa @ 5 days
Post tensioned applications (MPa@days) - 25MPa @ days	Contact Boral Technical Services

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40MPa	
Compressive Strength - 1 day (MPa)	~ 10
Compressive Strength - 7 days (MPa)	~35
Compressive Strength - 28 days (MPa)	40
Dry Shrinkage - microstrain (50% RH) - 56 days	<600
Nominal Dry Shrinkage - microstrain (50% RH) - 56 days	550
Maximum Dry Shrinkage - microstrain (50% RH) - 56 days	600
Post tensioned applications (MPa@days) - 22MPa @ days	22MPa @ 4 days 22MPa @ 5 days
Post tensioned applications (MPa@days) - 25MPa @ days	25MPa @ 5 days

50MPa	
Compressive Strength - 1 day (MPa)	~ 18
Compressive Strength - 7 days (MPa)	~48
Compressive Strength - 28 days (MPa)	50
Dry Shrinkage - microstrain (50% RH) - 56 days	<450
Nominal Dry Shrinkage - microstrain (50% RH) - 56 days	50MPa 20mm – 450 50MPa 20mm – 500
Maximum Dry Shrinkage - microstrain (50% RH) - 56 days	50MPa 20mm – 500 50MPa 20mm – 550
Post tensioned applications (MPa@days) - 22MPa @ days	22MPa @ 3 days 22MPa @ 4 days
Post tensioned applications (MPa@days) - 25MPa @ days	Contact Boral Technical for more information

>50MPa	
	Contact Boral Technical for more information

ENVIROCRETE® PLUS

Content Declaration (% by Weight) - NSW (Refer to EPD for TfNSW & Special applications)	
General purpose cement	7–14%
Ground granulated blast furnace slag	3–11%
Fly ash	0–3%
Silica fume	-
Coarse aggregate	38–50%
Manufactured sand	8–38%
Natural sand	0–38%
Admixtures	<0.3%
Steel Fibres	-
Water	6–9%

Concrete Mixes (Covered by EPD - NSW)	
Low carbon concrete products for special applications	• ENVIROCRETE® PLUS 20MPa • ENVIROCRETE® PLUS 25MPa • ENVIROCRETE® PLUS 32MPa • ENVIROCRETE® PLUS 40MPa • ENVIROCRETE® PLUS 50MPa • ENVIROCRETE® PLUS 65MPa • ENVIROCRETE® PLUS 80MPa
Concrete products for special applications	-
Fibrecrete products	• ENVIROCRETE® PLUS 32MPa 20KG STEEL FIBRE • ENVIROCRETE® PLUS 40MPa 20KG STEEL FIBRE • ENVIROCRETE® PLUS 50MPa 20KG STEEL FIBRE • ENVIROCRETE® PLUS 32MPa 25KG STEEL FIBRE • ENVIROCRETE® PLUS 40MPa 25KG STEEL FIBRE • ENVIROCRETE® PLUS 50MPa 25KG STEEL FIBRE • ENVIROCRETE® PLUS 32MPa 30KG STEEL FIBRE • ENVIROCRETE® PLUS 40MPa 30KG STEEL FIBRE • ENVIROCRETE® PLUS 50MPa 30KG STEEL FIBRE

ENVIROCRETE® PLUS

Content Declaration (% by weight) - VIC	
General purpose cement	6–11%
Ground granulated blast furnace slag	5–9%
Fly ash	–
Silica fume	–
Coarse aggregate	40–50%
Manufactured sand	0–20%
Natural sand	22–40%
Admixtures	<0.4%
Steel Fibres	-
Water	6–8%

Concrete Mixes (Covered by EPD - VIC)	
Low carbon concrete products	• ENVIROCRETE® PLUS 20MPa • ENVIROCRETE® PLUS 25MPa • ENVIROCRETE® PLUS 32MPa • ENVIROCRETE® PLUS 40MPa • ENVIROCRETE® PLUS 50MPa
Low carbon concrete products for special applications	–

Content Declaration (% by weight) - QLD	
General purpose cement	4-10%
Ground granulated blast furnace slag	4-10%
Fly ash	1-3%
Silica fume	-
Coarse aggregate	38-50%
Manufactured sand	0-23%
Natural sand	10-40%
Admixtures	<0.25%
Steel Fibres	-
Water	6-9%

ENVIROCRETE® PLUS

Concrete Mixes (Covered by EPD - QLD)	
Low carbon concrete products for special applications	• ENVIROCRETE® PLUS 20 MPa • ENVIROCRETE® PLUS 25 MPa • ENVIROCRETE® PLUS 32 MPa • ENVIROCRETE® PLUS 40 MPa • ENVIROCRETE® PLUS 50 MPa

Content Declaration (% by weight) - SA	
General purpose cement	5-10%
Ground granulated blast furnace slag	5-10%
Fly ash	-
Silica fume	-
Coarse aggregate	40-42%
Manufactured sand	7-11%
Natural sand	23-29%
Admixtures	<0.7%
Steel Fibres	-
Water	6-9%

Concrete Mixes (Covered by EPD - SA)	
Low carbon concrete products for special applications	• ENVIROCRETE® PLUS 20 MPa • ENVIROCRETE® PLUS 25 MPa • ENVIROCRETE® PLUS 32 MPa • ENVIROCRETE® PLUS 40 MPa • ENVIROCRETE® PLUS 50 MPa

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Content Declaration (% by weight) - WA Perth Region	LOW CARBON CONCRETE PRODUCTS
General purpose cement	4-15%
Ground granulated blast furnace slag	4-13%
Silica fume	0%
Coarse aggregate	38-46%
Manufactured sand	7-13%
Natural sand	0-32%
Admixtures	<0.7%
Steel Fibres	0%
Water	7-8%

Concrete Mixes (Covered by EPD - WA Perth Region)	
Low carbon concrete products	• ENVIROCRETE® PLUS 20 MPa • ENVIROCRETE® PLUS 25 MPa • ENVIROCRETE® PLUS 32 MPa • ENVIROCRETE® PLUS 40 MPa • ENVIROCRETE® PLUS 50 MPa • ENVIROCRETE® PLUS 65 MPa

Content Declaration (% by weight) - WA Perth Region	LOW CARBON CONCRETE PRODUCTS - FOR SPECIAL APPLICATIONS
General purpose cement	1-40%
Ground granulated blast furnace slag	0-27%
Silica fume	<3%
Coarse aggregate	0-46%
Manufactured sand	4-53%
Natural sand	7-37%
Admixtures	<0.7%
Steel Fibres	0%
Water	6-35%

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Concrete Mixes (Covered by EPD - WA Perth Region)	
Low carbon concrete products for special applications	• ENVIROCRETE® PLUS PT 40 MPa 22 MPa@3 DAYS • ENVIROCRETE® PLUS 50MPa LH 50 MPa@90 DAYS • ENVIROCRETE® PLUS HIGH SLUMP 50 MPa • ENVIROCRETE® PLUS 40 MPa DIAPHRAGM WALL • ENVIROCRETE® PLUS 40 MPa GB PTA TRACK SLAB

Content Declaration (% by weight) - NT	
Density	2,360-2,380 kg/m^3
General purpose cement	7-13%
Ground granulated blast furnace slag	3-9%
Fly ash	-
Silica fume	-
Coarse aggregate	40-45%
Manufactured sand	15-25%
Natural sand	10-20%
Admixtures	<0.3%
Steel Fibres	-
Water	7%

Concrete Mixes (Covered by EPD -NT)	
Low carbon concrete products	• ENVIROCRETE® PLUS 20 MPa • ENVIROCRETE® PLUS 25 MPa • ENVIROCRETE® PLUS 32 MPa • ENVIROCRETE® PLUS 40 MPa • ENVIROCRETE® PLUS 50 MPa
Low carbon concrete products for special applications	Contact Boral Technical Services

ENVIROCRETE® PLUS

Content Declaration (% by weight) - TAS

Contact Boral Technical Services for information

Concrete Mixes (Covered by EPD -TAS)

Contact Boral Technical Services for information

[1] Green Building Council of Australia (GBCA).
[2] Infrastructure Sustainability Council (ISC).
[3] Using the reference case from the GBCA Design and As-Built v1.3 rating tool.
[4] Using a reference case calculated from the GBCA upfront embodied carbon emissions calculator for concrete with GP cement.
[5] Minimum GWP reduction compared to AusLCI (v47) 0% SCM reference case for equivalent strenth grade.

CONTACT BORAL'S CONCRETE TEAM 1300 267 251

The information in this product sheet and any advice given should be viewed as a guide only. Boral recommends obtaining technical advice prior to construction. To ensure the information you are using is current, Boral recommends you review the latest building information available on the Boral website.

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