CRÖWN
LAMINATES & BEYOND

XTERIOR COMPACT LAMINATES

20236/2000

CRÖWN
LAMINATES & BEYOND

CROWN DECOR PVT.LTD.
One42, North Tower,
Suite 401- 403, 4th Floor
Ambli Bopal Road, B/H Ashok Vatika,
Ahmedabad – 380058, Gujarat, India
Contact : +91 79 4001 7979

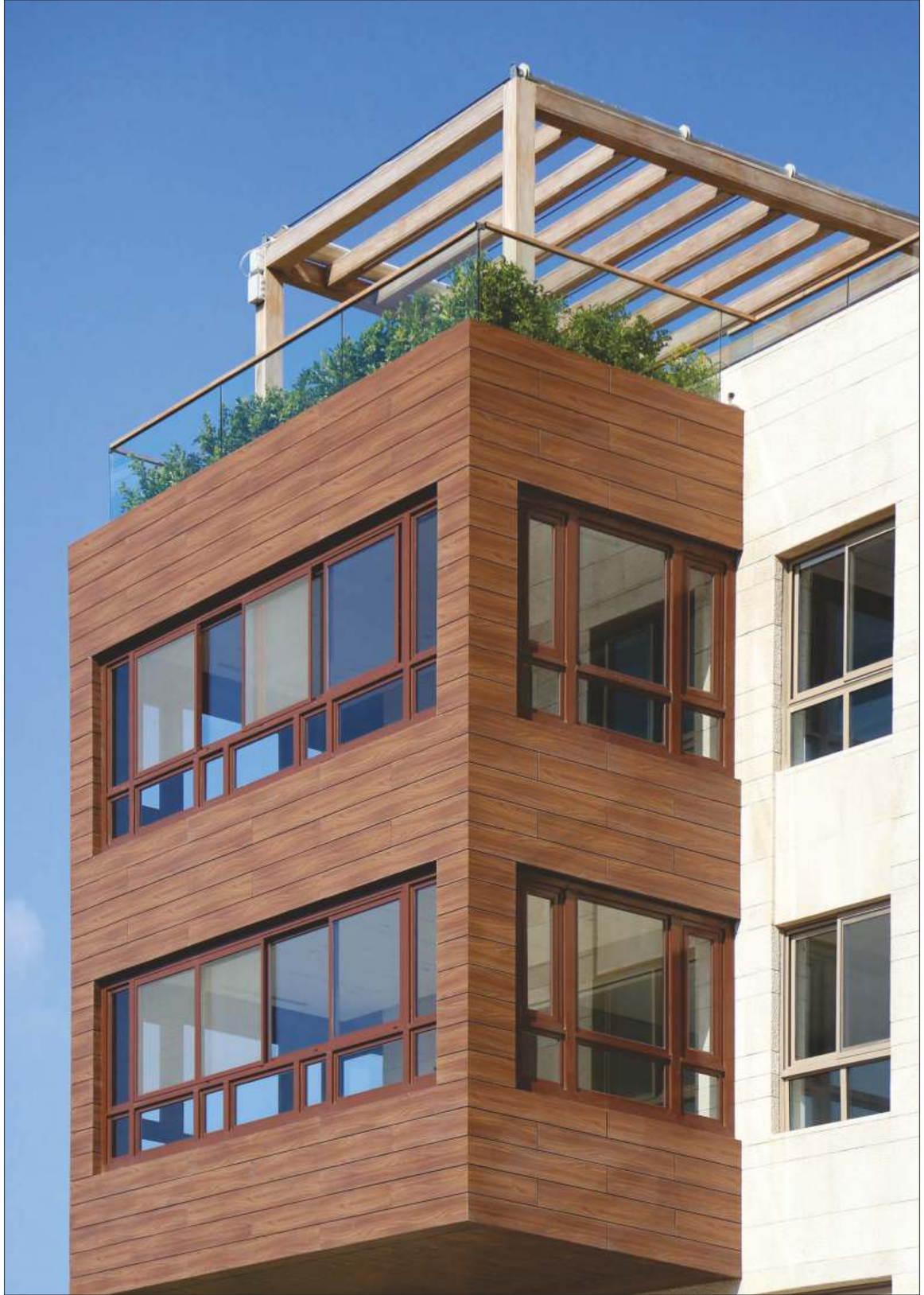
FACTORY
419/1, Radhe Industrial Estate,
Tajpur Road, Dist. Ahmedabad
Changodar - 382 213, Gujarat, India.

GLOBAL CONTACT POINT
The Regency, Unit 3, 2nd Floor,
6 Hungerford Street, Kolkata - 700017, India
Ph : +91 33 4066 0166, 2283 0166
E-mail : kanishka@crownlam.com

CRÖWN XCL
XTERIOR COMPACT LAMINATES

XTERIOR COMPACT
Laminates

www.crownlam.com



PARTIAL VIEW OF FACTORY

INTRODUCTION

Crown Decor (a Royale Touche Laminate Group Company), a niche Luxury Laminate brand from India, was launched in 1978 with the idea that a laminate has unlimited potential in surface decor. They made people to look at laminates as a resilient and flexible product. They gave laminates a complete makeover with unparalleled endless design and textures. The product has rich luxurious feel that adds aesthetic value to interiors that make architect, end users and interior designer's life easy.

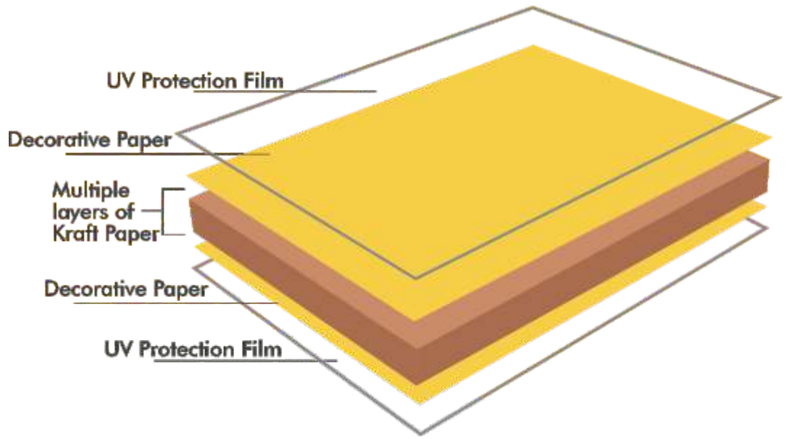
With over 45 years of experience in the manufacturing industry, group has eight production lines of high pressure laminates producing over 20 million sq mtr. annually in 4 different sizes and in thickness ranging from 0.6mm to 25mm which are made of 100% phenolic resin. The laminates are manufactured at a qualifying facility equipped with imported machinery from Spain, Italy and Germany. Products are created with imported design papers made from highly stable and resistant pigments which guarantees freshness years after years of its use. All the products bear Greenguard, Greenbuilding, FSC, CE, EN 438, Green Label, NEMA LD3-2005, Indian Standard & Fire Rating B-s1d0 Certification. Its's an Indian Power Brand classified product.

Crown XCL Laminate, is a high quality HPL panel. Innovative, practical and durable solution for Buliding Facade/ Cladding, Balconies, Verandah, Fences, Outdoor benches, Table Tops application. Also in product range are anti skid/ anti slippery surface laminates suitable for deck and outdoor flooring application. The exceptional characteristics of XCL panel make this product a versatile solution with simple installation and maintenance, thereby improving the look, performance and durability. We have completed several projects Pan India and Overseas.

- Water Resistant
- Heat Resistant
- Resistant To Cigarette Burns
- Colourfast
- Scratch Resistant
- Impact Resistant
- Environment Friendly
- Stain Resistant
- Sleek Modern Design
- Rot Resistant
- Stability
- Suitable for Contract use
- Flame Resistant
- Weather Resistant
- Indoor and Outdoor use
- Easy To Clean
- Minimum Maintenance

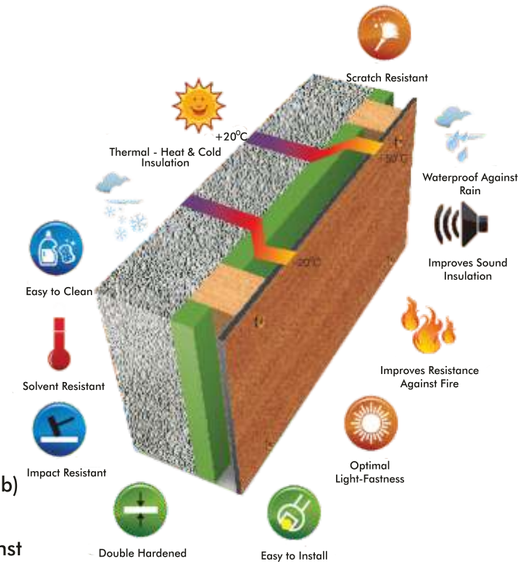
COMPOSITION

Crown XCL Panel is a solid phenolic engineered exterior facade panels having a decorative surface on both the sides. Robust and resilient, these rigid homogeneous panels are manufactured using thermosetting resins reinforced with cellulose fibre for added strength and durability. An acrylic overlay provides enhanced UV protection. With a density of 1.45gms/Cm3. XCL panel is impressively strong damage resistant and has a remarkable structural stability requiring no substrate support in thickness over 6mm.



FEATURES & BENEFITS

- ★ Decorative
- ★ High Weather Resistance
- ★ Optimal Light Fastness
- ★ Scratch Resistance
- ★ Solvent Resistance
- ★ Self Supporting
- ★ Impact Resistance
- ★ Heat Resistance
- ★ Fire Resistance
- ★ Easy to Clean and Maintain
- ★ Overall Light Weight Substructure and facade
- ★ Sustainability
- ★ Quick and Easy to Assemble
- ★ Increased Sound Proofing Function (upto 15 Db)
- ★ Decrease Air Conditioning Costs
- ★ Provide Wall Protection & Heat Insulation against Atmospheric Precipitation

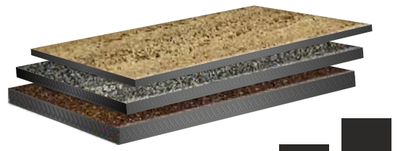


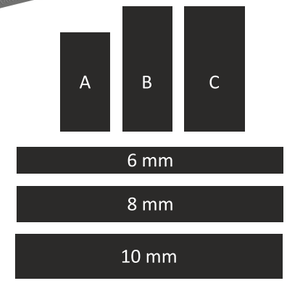
DIMENSIONS

2440 x 1220 mm (A)
3050 x 1220 mm (B)
3050 x 1300 mm*(C)
*(Available in Selected Colours)

THICKNESS

6, 8 and 10 mm





DECOR

Double - sided
Single - sided
(available upon request)

FINISH

Suede Finish
Note : Custom finishes available upon request in size 1220 x 2440 mm and 1300 x 3050 mm

PERFORMANCE

Properties	Standard Value	CrownXCL Value
Apparent Density	1.35g/cm^3	1.45g/cm^3
Flexural Strength	80N/mm^2	114N/mm^2
Modulas of elasticity	9000N/mm^2	13966N/mm^2
Tensile Strength	60N/mm^2	66N/mm^2
Dimentional stability at elevated temperatures	Lengthwise: 0.40% Crosswise: 0.80%	Lengthwise: 0.25% Crosswise: 0.40%
Artificial Weathering	Grey Scale: Rating 3 Appearance: Rating 4	Grey Scale: Rating 4 Appearance: Rating 4
UV-light resistance	Grey Scale: Rating 3 Appearance: Rating 4	Grey Scale: Rating 4 Appearance: Rating 4

FIRE BEHAVIOUR

Valid in	Test Method	CrownXCL Value
Canada	CAN/ULC S134	Passed
Europe	CSN EN 13501-1+A1	B-s1, d0 (Passed)
USA	NFPA 285	Passed
Canada + USA	ASTM E 84	Flame Spread Index: 10 Smoke Developed: 0

APPLICATIONS

FACADE

LOUVERS

GATE

PARGOLA

SHOP FRONT

BALCONY

INDEX

S. NO.	DESIGN	NAME	PAGE
1.	10X	Light Blue White	41
2.	11X	Black	39
3.	13X	Egg White	41
4.	17X	Mysore Ivory	42
5.	23X	Coffee	40
6.	EB 501X	Grey	39
7.	EB 502X	Black	39
8.	580X	Plank Sear	43
9.	601X	Arctic White	41
10.	602X	Silver Grey	40
11.	603X	Dark Grey	39
12.	604X	Grey	39
13.	605X	Burgandy	40
14.	606X	Green	40
15.	608X	Beige - F033	42
16.	609X	Blue - F031	41
17.	610X	Grey - F019	40
18.	611X	Beige - F032	41
19.	612X	Gris Fonce	40
20.	613X	Monument Green	41
21.	614X	Pebble Grey	40
22.	615X	Metal Grey	40
23.	616X	Beige	42
24.	617X	Olive Green	41
25.	618X	White	41
26.	619X	Grey	39
27.	620X	White	41
28.	621X	Grey	39
29.	622X	White	41
30.	623X	Medium Grey	39
31.	624X	White	41
32.	625X	Light Grey	40
33.	626X	Cream	42
34.	627X	Light Grey	40
35.	628X	Red	40
36.	629X	Mysore Ivory	41
37.	630X	Grey	39
38.	631X	Bambus	44
39.	632X	Bambus	44
40.	633X	Bambus	44
41.	634X	Bambus	43
42.	637X	Brooklyn	53
43.	638X	Pinara	55
44.	639X	Banana Abaca	45
45.	642X	Canyon Monument Oak	46
46.	643X	Canyon Monument Oak	52
47.	644X	Canyon Monument Oak	45
48.	645X	Averio Esche	47
49.	646X	Belidor	60
50.	647X	Greystone	53
51.	648X	Oriental Brown	58
52.	649X	Cairo Beech	49
53.	649X - NEW	Cairo Beech	52
54.	650X	Notical Wood	51
55.	651X	Stucco	50
56.	652X	Notical Wood (red)	51
57.	653X	Seravazza	59
58.	654X	Statuario Venato	58
59.	655X	Brooklyn	55
60.	656X	Montpelier	54

S. NO.	DESIGN	NAME	PAGE
61.	658X	Tabo Slate	57
62.	659X	Metallic Oxid	61
63.	661X	Greystone	53
64.	662X	Mayfield Fabric	48
65.	663X	Mayfield Fabric	51
66.	667X	Cement	53
67.	668X	Sumatra Teak	50
68.	669X	Maremma	59
69.	670X	Maremma	59
70.	671X	Grey Caspio	54
71.	672X	Grey Caspio	54
72.	673X	Figura Oak	44
73.	674X	Figura Oak	43
74.	675X	Astana Pine	48
75.	676X	Canyon Malibu Chestnut	47
76.	678X	Damast	60
77.	679X	Delano Eiche	46
78.	682X	Avenida	56
79.	683X	Abbey Road (light)	54
80.	684X	Stromboli	60
81.	685X	Mandu Slate	57
82.	686X	Mandu Slate	57
83.	687X	Mandu Slate	57
84.	688X	Beech	47
85.	689X	Corean	56
86.	690X	Fuori	51
87.	691X	Bandung Teak	48
88.	692X	Maracaibo	45
89.	693X	Greta	46
90.	694X	Alaska Oak	47
91.	695X	Canyon Renaissance Oak	49
92.	696X	Canyon Waterford Oak	50
93.	697X	Canyon Australian Blackwood	49
94.	698X	Apple Crates	52
95.	699X	Callaham	50
96.	AF701X	White	41
97.	AF702X	Black	39
98.	AF703X	Beige	42
99.	AF704X	Grey	39
100.	AF705X	Anthrazit	39
101.	711X	Red	40
102.	712X	Green	41
103.	713X	Blue	41
104.	714X	Orange	42
105.	715X	Yellow	42
106.	716X	Brown	40
107.	717X	Silver Grey	40
108.	718X	Tin	40
109.	719X	North Sea	39
110.	720X	Ebony	40
111.	721X	Anthrazit	39
112.	723X	Maroon	40
113.	724X	White	41
114.	751X	Grey	39
115.	752X	Black Blue	39
116.	753X	Black Brown	39
117.	802X	Samoa Teak	45
118.	803X	Wisla Pine	48
119.	804X		60
120.	805X		61

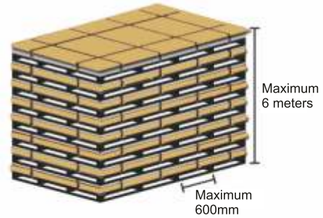
S. NO.	DESIGN	NAME	PAGE
121.	806X		61
122.	851X	Cold White	41
123.	856X	Frosty White	41
124.	871X	Beige[irish Cream]	42
125.	885X	Grey	40
126.	886X	Grey	39
127.	910X	Criaza Pear	49
128.	918XL	Manhattan	56
129.	921X	Torano	59
130.	924X	Manhattan	56
131.	931X	Bianco Onyx	58
132.	932X	Skadi	58
133.	933X	Nexus	55
134.	934X	Nexus	55
135.	935X	Yokshire Chestnut	46
136.	EXP-51X	Novecento Pine	43

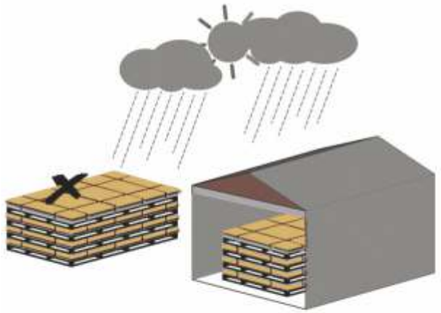
HANDLING & LOGISTIC GUIDELINES

Handle Crown XCL panels with care in order not to damage the edges and surface of high quality material. In spite of the excellent surface hardness and the protection film, the stack weight of compact weight panel is a positive cause of damage. Therefore, any form of dirt or dust between these panels must be avoided. Panels must be secured against slippages during transportation. When loading and unloading, the panels must be lifted and not pushed or pulled over the edges.

During the handling and installation of Crown XCL panels, one must use protection equipments specially hand gloves. The panels must be stacked horizontally on flat and stable support with supporting panels. These panels must lie completely flat and the coverplates should be left on the stack. The top cover should be weighed down and must be wrapped by plastic.

Crown XCL panels are to be stored in a closed room under normal climatic conditions to avoid excess humidity and heat. Appropriate distance to be maintained between each side of the panel.





CLEANING GUIDELINES

Crown XCL panels are low maintenance. Thanks to its homogeneous and pore free surface, it does not require any special care. However, after processing and finishing or over the course of time, it maybe necessary to clean the surface.

The recommended cleaning procedures apply to surface contaminations resulting from the general use, processing and installation of Crown XCL panels.

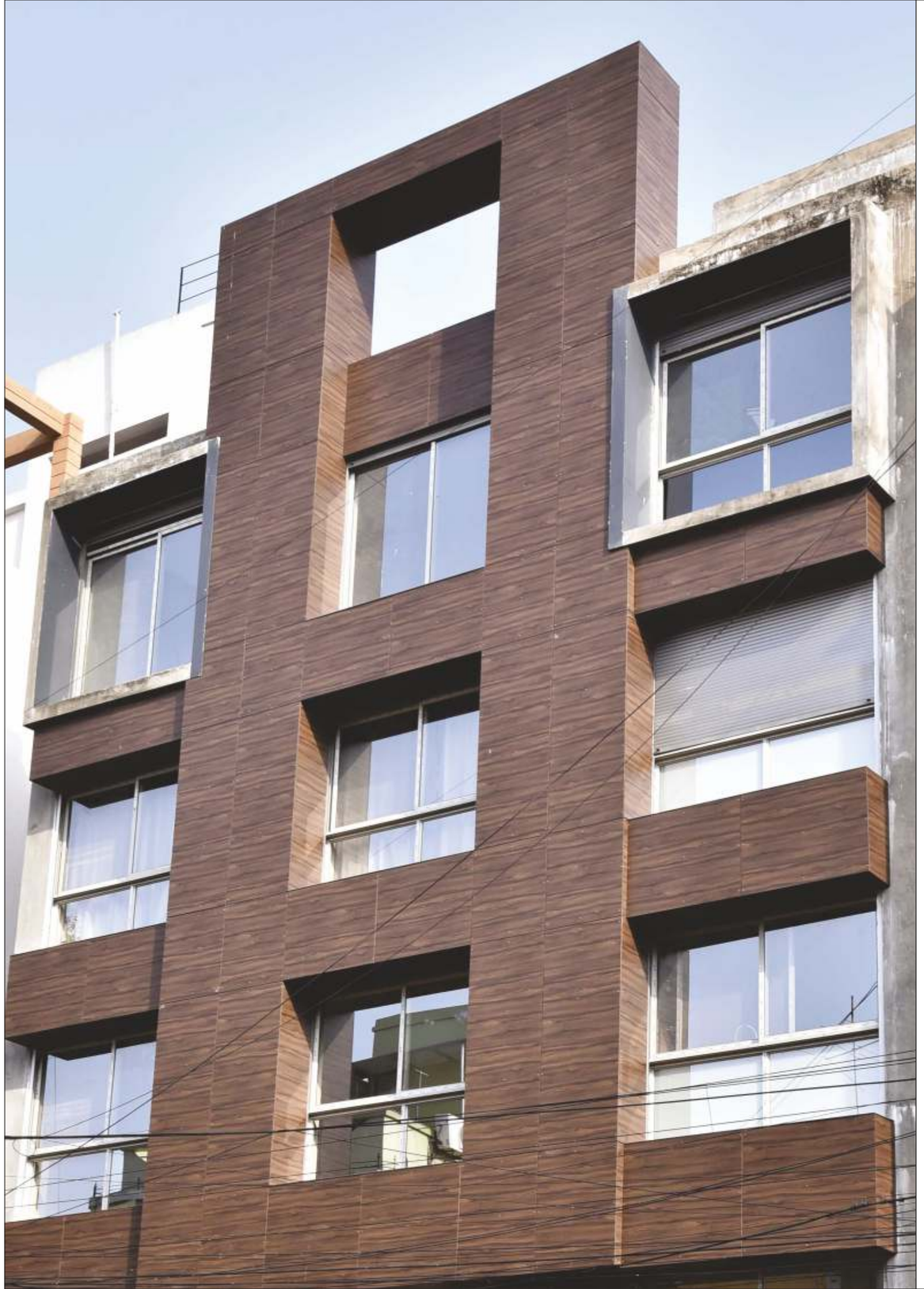
Cleaning Methods

- Light dirt can be removed with clear, luke warm water. Heavier dirt can be removed with soap suds or a liquid solution.
- Use non abrasive household cleaning products diluted in water.
- Use fine and clean cloth or sponge.
- Always rinse with clean, clear water to prevent streaks from forming.

The following cleaning agents must never be used :

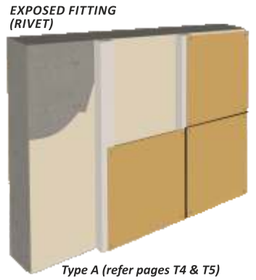
- Abrasive cleaning agents (e.g. scrubbing powder and abrasive cleaning liquids)
- Solvents and solvent cleaner (e.g. acetone, benzine, thinner etc.)
- Scrubbing and abrasive cleaning rags or sponges (e.g. micro fiber cloth, scrubbing sponge, steel wool etc.)
- High pressure cleaners and steam cleaners.

INSTALLATION DETAILS

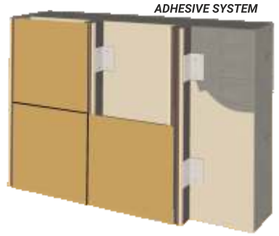


INSTALLATION SYSTEM

CrownXCL installation system is a thermally broken, ventilated rainscreen system that provides maximum efficiency at cost savings compared to alternatives. CrownXCL installation prevents thermal bridgeing caused by other installation systems. This reducing the environment impact of the building and can provide significant heating and cooling cost savings for your buildings. CrownXCL installation system provides ventillation behind the panel, which prevents moisture buildup and increases the longevity of panels.



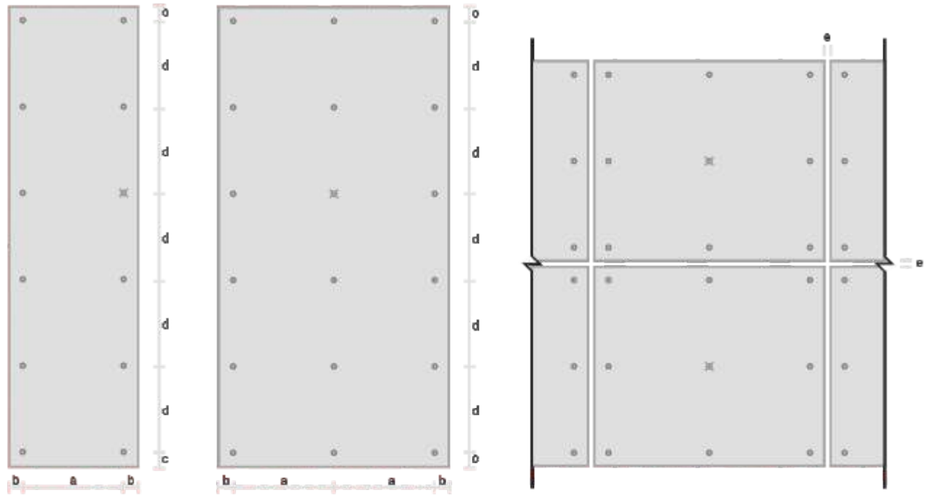
Type A (refer pages T4 & T5)



Type B (refer pages T6 & T7)

Type C (refer pages T8 & T9)

SPACING



✖ Represents a fixed point.

The diagrams above show the optimal space between fasteners and the edge pf the panel. It also displays the optimal spacing between individual panels. These are guidelines and can be altered appropriately depending on the project.

Panel Thickness *	Maximum Fastener Spacing (a) *	Minimum Edge Distance (b, c) *	Maximum Fastener Spacing (d) *	Expansion Joint (e) *
6mm	600mm	50, 20mm	600mm	6-10mm
8mm	750mm	50, 20mm	750mm	6-10mm
10mm	900mm	50, 20mm	900mm	6-10mm

PROCESS RECOMMENDATIONS FOR CUTTING

Crown XCL Panel should be straight and perpendicular in size before cutting.

SAW & SAW BLADES

Carbide tipped saw blades are used for cutting two sides having tooth spacing of 10-15mm with cutting speed of 40-100 m/s. Cost effective results for producing a clean cut on both sides are obtained when using a marking saw. When using circular saw blades, the quality of the cut can be influenced by adjusting the angle of emergents (height adjustment.)

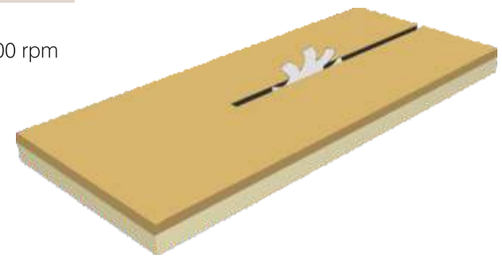
For straight cuts with hand heild circular saws, a stop bar or guide rails should be used. Fitted panels can also be machined on site using an electric hand held planning machine with carbide blade.

Cutting speed V in m/s as a function of tool diameter and speed, e.g. on circular saws.

BLADE DIAMETER IN (mm)	CUTTING SPEED V IN (m/s)					
400	20	40	60	80	100	100
380	19	38	57	76	95	114
360	18	36	54	72	90	108
340	17	34	51	68	85	102
320	16	32	48	64	80	96
300	15	30	45	60	75	90
280	14	28	42	56	70	84
260	12	26	39	52	65	78
240	12	24	26	48	60	72
					55	66
200	10	20	30		50	60
180	9	18	27		45	54
160	8	16	24		40	48
140	7	14	21		35	42
120	6	12	18		30	36
100	5	10	15		25	30
80	4	8	12		20	24
60	3	6	9		15	18
40	2	4	6		10	12
20	1	2	3		5	6
	1000	2000	3000		5000	6000

SPECIFICATION OVERVIEW FOR CUTTING MACHINE

Rated power input	2,100 w
No-load speed	4000 - 6000 rpm
Weight without cable	7.6 kg
Saw blade bore	25 mm
Saw blade diameter	235 mm
Number of Teeth	40 - 48
Cutting depth	
Cutting depth (90°)	85 mm
Cutting depth (45°)	65 mm



The cutting machine will be Bostch GKS235

PROCESS RECOMMENDATIONS FOR DRILLING

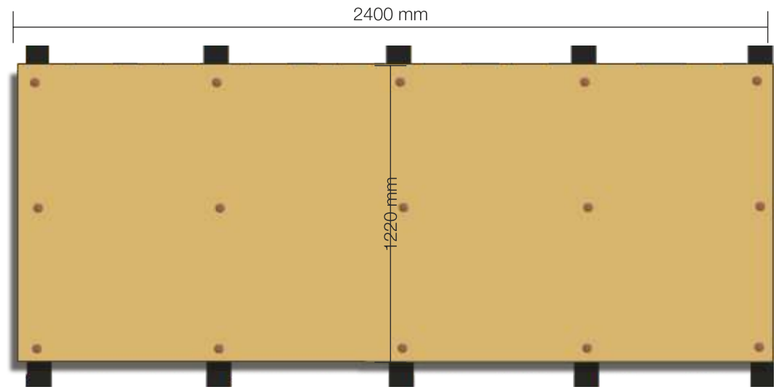
Crown XCL panel are drilled using the metal drill bits or steel bits with a cutting angle of more than 100 . The panel must be well placed to achieve a good hole.

The holes of fixing panel holding the rivet must be 2 mm greater than diameter of the rivet, except the hole at the panel geometrical center.

Drilling of higher diameters must be done with universal drilling machines and with drills without a center point.

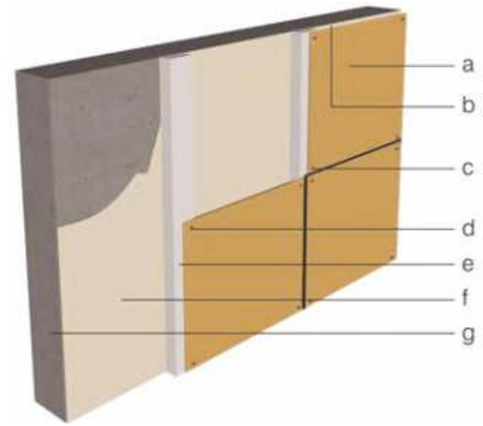
In order to prevent the front face from flaking where it comes out of the machine.

- The progression of the drill must be smooth.
- It's recommended to work on a flat table that can be drilled.
- The edges will not require a special treatment but are machinable for particular finishes.
- Machine the edge of the compact by square cutting, chaffering and beveling.



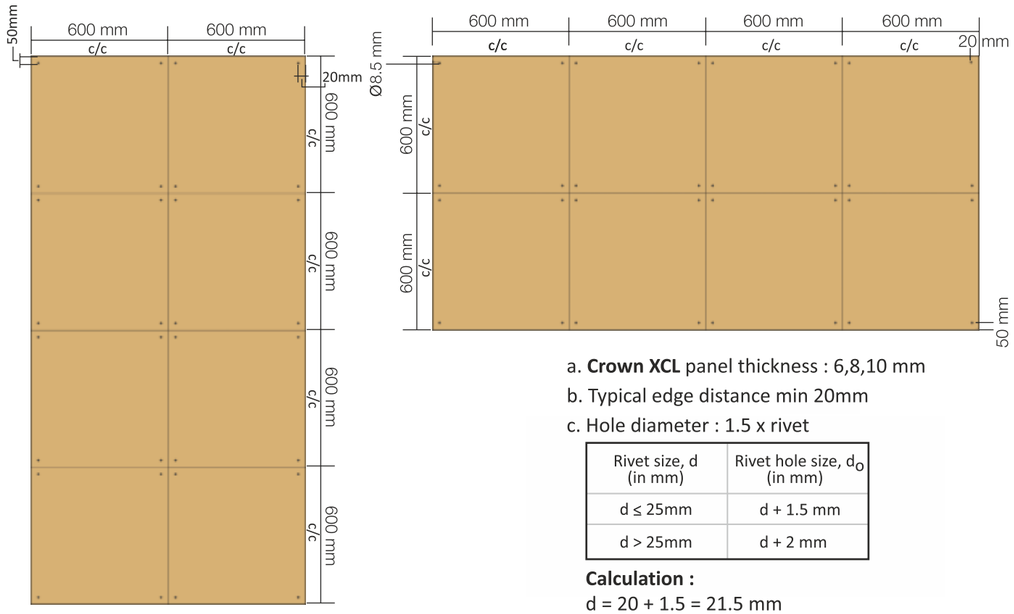
FIXATION - TYPE A

EXPOSED FITTINGS (Rivet)



BOX- SECTION DETAIL

a. **Crown XCL** panel thickness : 6,8,10 mm
b. Air cavity 20 mm (min.). The air cavity to be filled by GI or Aluminium Flasing
c. Rivet hole diameter
d. Rivet
e. Vertical fixing profile
f. Load bearing wall
g. Weather resistive barrier



a. **Crown XCL** panel thickness : 6,8,10 mm
b. Typical edge distance min 20mm
c. Hole diameter : 1.5 x rivet

Rivet size, d (in mm)	Rivet hole size, d_o (in mm)
d ≤ 25mm	d + 1.5 mm
d > 25mm	d + 2 mm

Calculation :

d = 20 + 1.5 = 21.5 mm

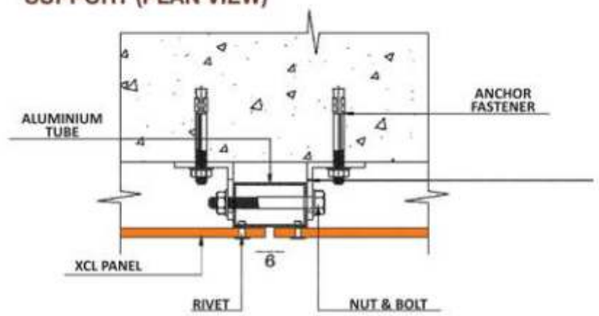
Due to the heating effect, the size of rivets gets expanded which upon cooling gets reduced (called shank diameter).

d. Fastening Spacing :

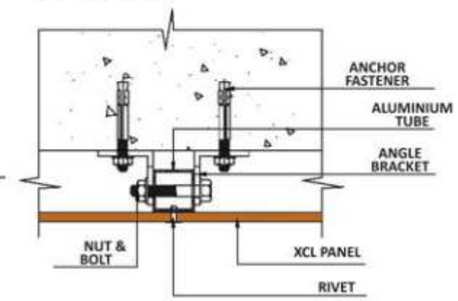
6 mm	8 mm	10 mm
600 mm	750 mm	900 mm

CAD DETAILS OF FIXATION - A (BOX SECTION)

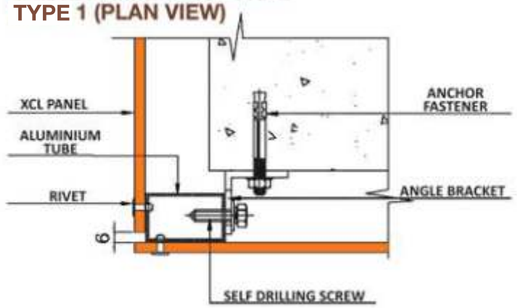
TYPICAL PLAN OF MIDDLE SUPPORT (PLAN VIEW)



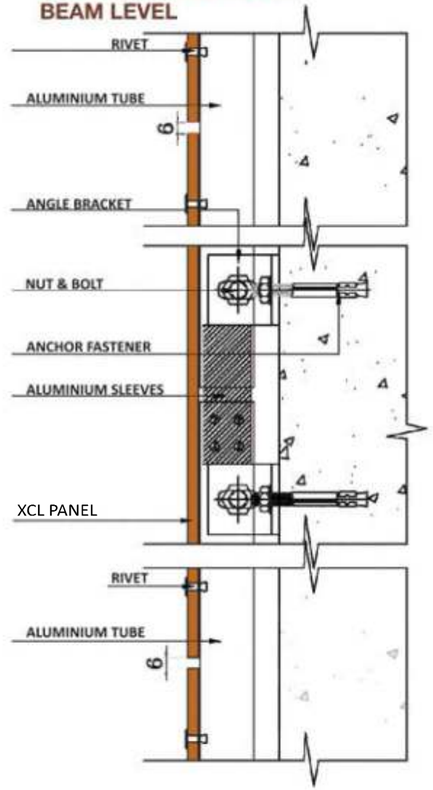
TYPICAL GROOVE DETAIL (PLAN VIEW)



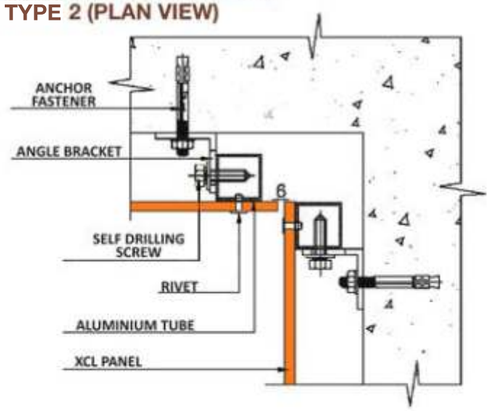
TYPICAL CORNER DETAIL TYPE 1 (PLAN VIEW)



BRACKETING DETAIL AT BEAM LEVEL

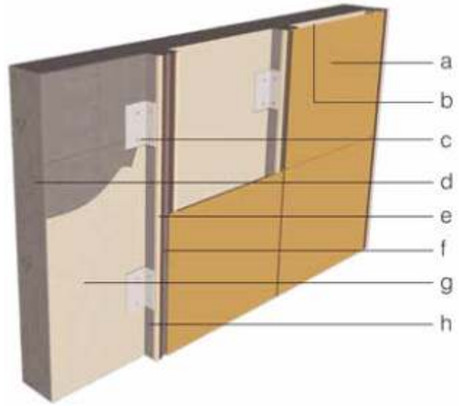


TYPICAL CORNER DETAIL TYPE 2 (PLAN VIEW)



FIXATION - TYPE B

ADHESIVE SYSTEM

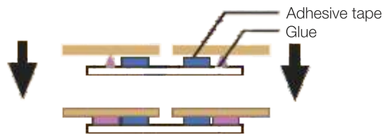


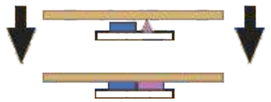
BOX- SECTION DETAIL

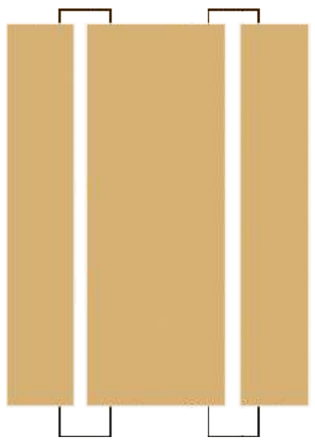
a. **Crown XCL** panel thickness : 6,8,10 mm
b. Air cavity 20 mm (min.). The air cavity to be filled by GI and Aluminium Flasing
c. Stainless Screw
d. Load Bearing Wall
e. Panel Fixing Tape
f. Panel Adhesive
g. Weather Resistive Barrier
h. Vertical Fixing Profile

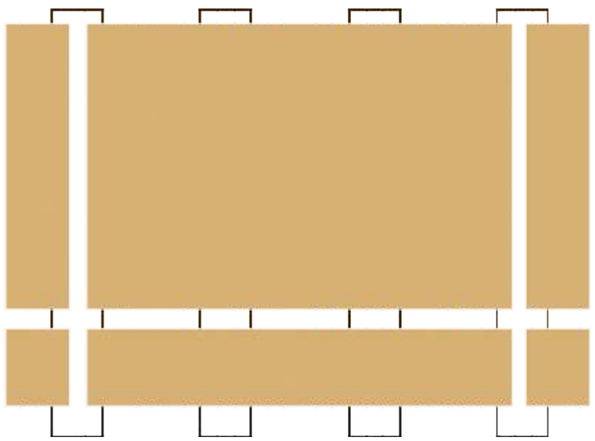
For Installation with Adhesive Panel (Spacing of the Vertical Support	
Panel Thickness	Fastening Spacing
6 mm	450 mm
8 - 10 mm	600 mm

Note: Proper Procedure must be followed for the application of glue.



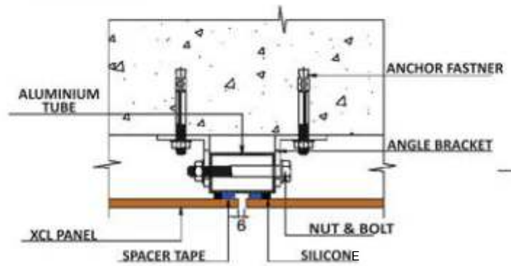




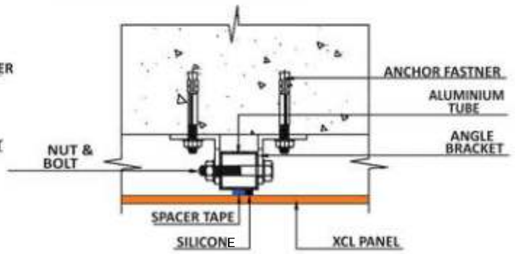


CAD DETAILS OF FIXATION - B (ADHESIVE SECTION)

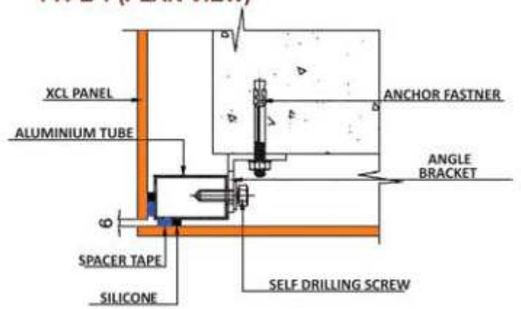
TYPICAL XCL GROOVE DETAIL (PLAN VIEW)



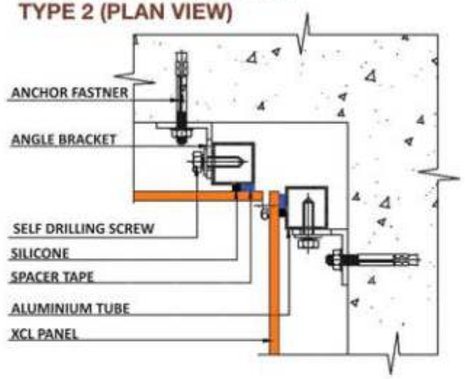
TYPICAL PLAN OF MIDDLE SUPPORT (PLAN VIEW)



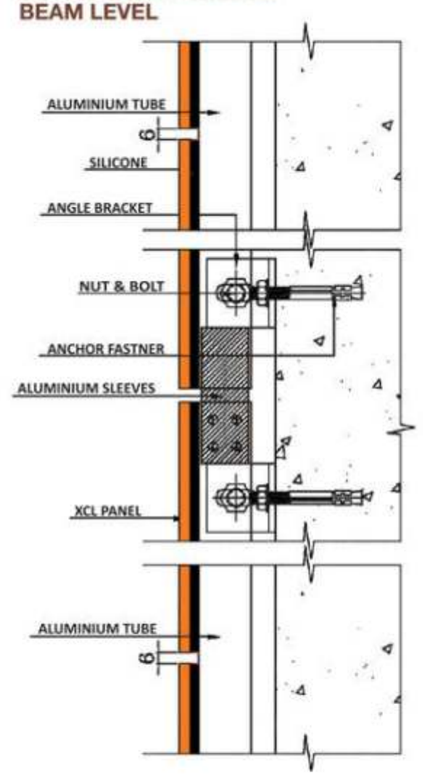
TYPICAL CORNER DETAIL TYPE 1 (PLAN VIEW)



TYPICAL CORNER DETAIL TYPE 2 (PLAN VIEW)

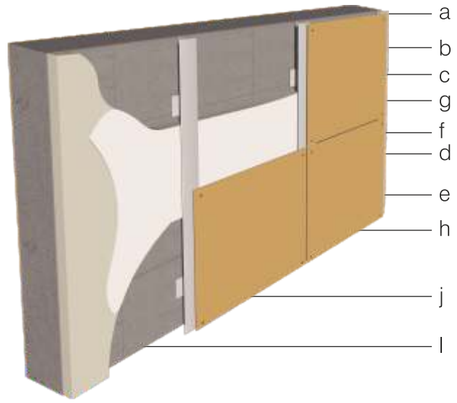


BRACKETING DETAIL AT BEAM LEVEL



FIXATION - TYPE C

EXPOSED FITTING TYPE 2 (L&T Rivet)



T - Section Detail

a. Load Bearing Wall

b. Air cavity 20 mm (min.). The air cavity to be filled by GI or Aluminium Flasing

c. **Crown XCL** panel thickness : 6,8,10 mm

d. Rivet Hole Diameter

e. Rivet

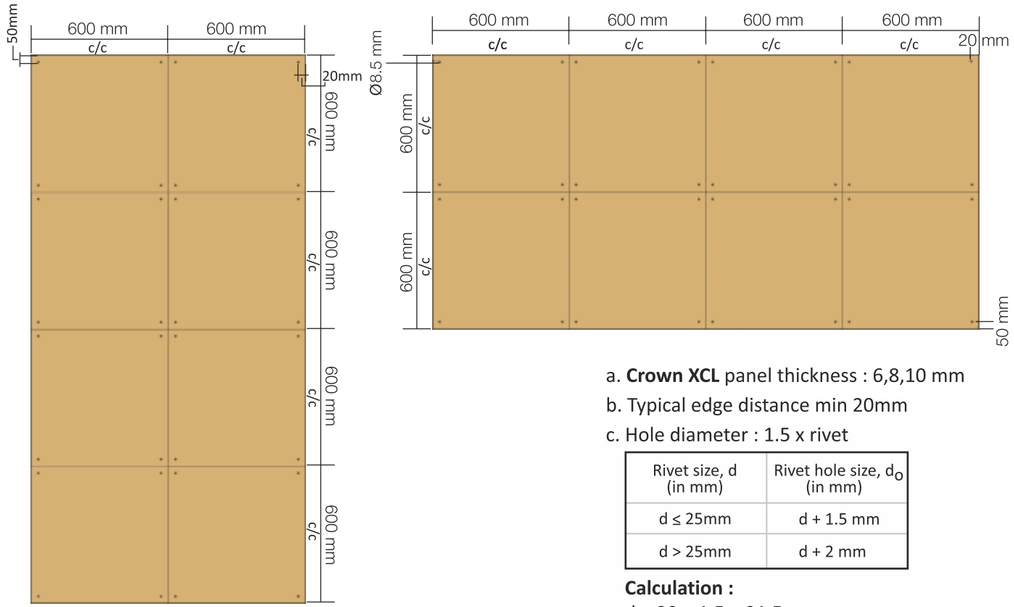
f. Vertical Fixing Profile

g. S.S.SCcrew

h. Fixing Bracket

I.Thermal Insulation

j. Anchor Bolt



a. **Crown XCL** panel thickness : 6,8,10 mm

b. Typical edge distance min 20mm

c. Hole diameter : 1.5 x rivet

Rivet size, d (in mm)	Rivet hole size, d_o (in mm)
d ≤ 25mm	d + 1.5 mm
d > 25mm	d + 2 mm

Calculation :

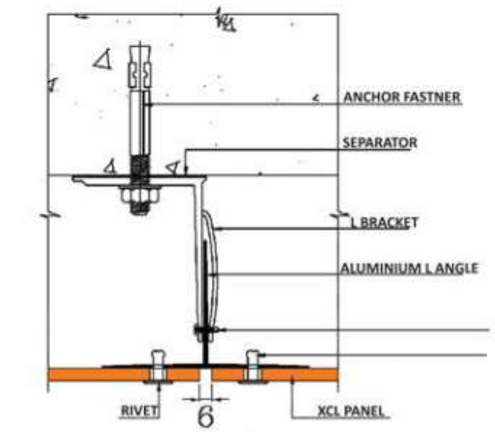
d = 20 + 1.5 = 21.5 mm

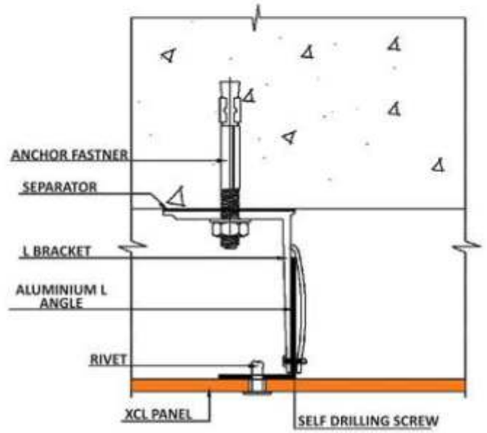
Due to the heating effect, the size of rivets gets expanded which upon cooling gets reduced (called shank diameter).

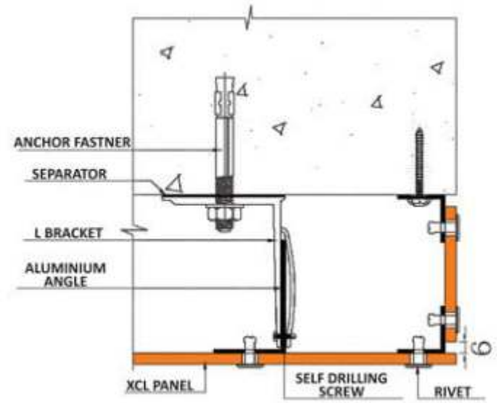
d. Fastening Spacing :

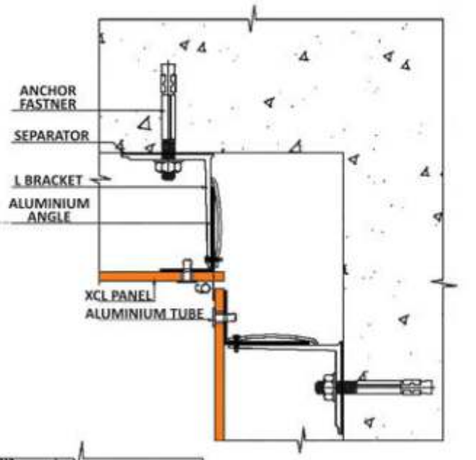
6 mm	8 mm	10 mm
600 mm	750 mm	900 mm

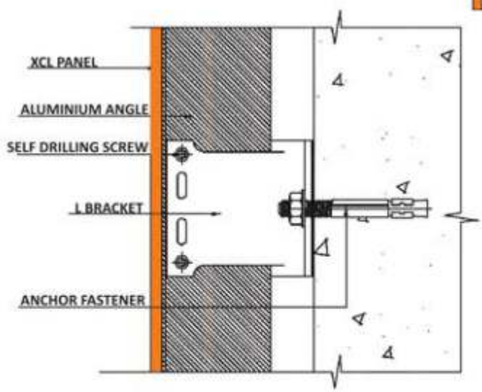
CAD DETAILS OF FIXATION - C











FUNCTION & ADVANTAGES OF REAR VENTILATED FACADE

THE BUILDING ENVELOP

Crown XCL installations utilising the rain screen system contribute to seven areas of the LEED credits across several LEED rating systems. In order to be recognised by these rating systems, they must have various sustainable attributes. One of the most important is the system durability. Because of its long life span, there are no re-furbishments required and very little maintenance. Using a ventilated insulated rain screen cladding system means less material replacement and considerably lower maintenance ncost over the lifetime of the building or structure.

The rain screen cladding system is used in conjunction with Crown XCL panels for the exterior of the building enclosure. It is especially resistant to bold mold and moisture build up, which directly contributed to the quality of the living environment. It also helps insulate the exterior of a building, which helps to address any themal bridging issues.

The biggest benefit of using rain screen systems is the temperature regulation and its ability to accommodate for the use of exterior insulation, continuous energy barrier, preventing thermal building which causes energy loss and building envelope inefficiency.

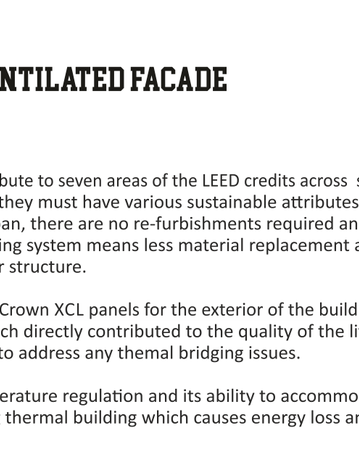
The ventilated rain screen cladding system, (on its own) also helps to cool the building as most of the sun's rays are reflected away. Additionally, any heat that does in fact pass through the exterior wall dissipates because of the ventilating effect of the air space between the Crown XCL panel and the structual wall itself. Ultimately, any residual heat that penetrates the building is very minimal.

Crown XCL panel performs best when installed in a ventilated wall assembly also called a ventilated rain screen assembly. The ventilation that occurs in the space behind the panel will ensure that the moisture content of the panel is the same on both the inside and the outside ensuring the panel expands and contacts evenly and does not cause the panel to buckle. This movement of air behind the panel also ensures that moisture does not build up in the insulation so preenting mould to find a habitat inside the wall.

COMPONENTS OF VENTILATED FACADE

XCL sizes

Panel Sizes	1220 x 2440 mm 1220 x 3050 mm *1300 x 3050 mm *(Available in Selected Colours)
Thickness	6, 8 & 10 mm



Substructure
The substructure may be made up of :
• Metallic brackets (L)
• Vertical profile (T) or Box Section

Elements used for attachment of Crown XCL panels to the substructure
Panels are attached to the substructure using screws, rivets or other hidden attaching devices

ADVANTAGES OF REAR VENTILATION SYSTEM

CALCULATIONS FOR FACADE SYSTEM

Loads to be taken into consideration

The loading to be factored into calculating the facade system is worked out using the weight of the panels themselves and the wind load. The effects of variations in temperature or humidity do not need to be taken into account when the system has been calculated and executed properly.

The installer must take into account local wind load and national building regulations.

RECOMMENDED PANEL WEIGHTS

Weight of the Panel = 1.45gm/cm3

WIND LOAD

Wind load is transmitted through panels to the substructure and unloaded through the supporting wall. Calculations are performed on a project basis by assigned engineers. Please contact your preferred system manufacturer or installer who will be able to provide the necessary values and calculations. Your Royale Touche Group representative can provide contact information, if required.

DESIGN

The following recommendations needs to be taken into consideration:

- The minimum distance between a drilled hole and the edge of the Crown XCL panel should be 20mm (or 75mm if concealed and the maximum distance should be the panel thickness x 10
- The minimum space between Crown XCL panels is 6-10mm. The Crown XCL panel will expand and contract at a rate of 2mm per meter length of panel.
- The maximum distance between screws/rivets depends on the thickness of the panel.
- A minimum of 6mm thickness is recommended for facade cladding.

SETTING UP THE SYSTEM

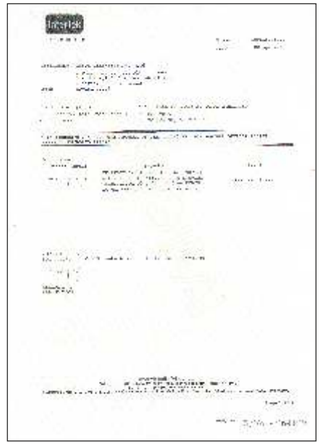
The system should be installed by skilled and experienced fitters using the appropriate tools and equipment. The system profile should be perfectly levelled and flat, particularly when using panels of 6mm thickness. The system manufacturer's instructions must be followed carefully especially with regard to the attachment of the parts of the profile to allow for its expansion differential for thermal loads.

Crown XCL panels should be pre conditioned, outdoor on site, for a period of 72 hours before installation. (The protective film should be removed from both sides of the panel simultaneously before installation.)

Crown XCL panels should be transported packed on the specially supplied pallets and covered with a cap sheet. Care should be taken to shield the protective film on the surface of the panles from solar radiation or other heat sources during pre-conditioning and storage.

Lift the panels straight up. Do not slide the panels against each other.

CERTIFICATIONS



TECHNICAL SPECIFICATIONS

EXTERIOR GRADE COMPACT LAMINATE SIZE : 1220mm x 2440mm & 1220mm x 3050mm			
Sl. No.	Properties	EDF Grade Specification As per EN 438 - part 6	CROWN LAMINATES & Beyond Values
1	Thickness (mm.) (max.)		
	5.00⩽ t <8.00 (mm.)	6.00∓0.40mm.	6.15 mm.
2	Length (mm.)	2440.00 + 10.00/-0.00mm.	2441.00 mm.
3	Width (mm.)	1220.00 + 10.00/-0.00mm.	1221.00 mm.
4	Edge Straightness mm. (max)	1.50 mm./m.	0.90 mm./m.
5	Edge Squareness mm. (max)	1.50 mm./m.	0.80 mm./m.
6	Flatness mm. (max)		
	2.00⩽ t <6.00 mm.	8.00 mm./m.	4.00 mm./m.
	6.00⩽ t <10.00 mm.	5.00 mm./m.	2.50 mm./m.
	t⩾10.00 mm.	3.00 mm./m.	1.30 mm./m.
7	Flexural Modulus (min.)	9000 Mpa.	13966 Mpa.
8	Flexural Strength (min.)	80 Mpa.	114 Mpa.
9	Tensile Strength (min.)	60 Mpa.	66 Mpa.
10	Density, gm./cm3 (min.)	1.35 gm./cm3	1.45 gm./cm3
11	Resistence to impact by large diameter ball.		
	a) Drop height mm. (min.)		
	2.00⩽ t <5.00 mm. (t=nominal thikness)	1400 mm.	1600 mm.
	t⩾5.00 mm.	1800 mm.	2000 mm.
	b) Indentation dia. mm. (max.)	10 mm.	6 mm.
12	Resistence to wet conditions		
	a) Mass increase (%) max.		
	2.00⩽ t <5.00 mm. (t=nominal thikness)	10%	4%
	t⩾5.00 mm.	8%	3%
	b) Appearance not worse than	Rating 4	Rating 5
13	Dimensional stability at elevated temperature		
	2.00⩽ t <5.00 mm. (t=nominal thikness)		
	a) Longitudinal, % max	0.30%	0.25%
	b) Transverse, % max	0.60%	0.40%
	t⩾5.00 mm.		
	a) Longitudinal, % max	0.30%	0.12%
	b) Transverse, % max	0.60%	0.10%
14	Resistance to climatic shock		
	a) Appearance	Rating 4	Rating 4
	b) Flexural Strength index, min.	0.95	1.10
	c) Flexural Modulus index, min.	0.95	1.50
15	Resistance to artificial weathering (Including Light Fastness)	After 650MJ/m2 radiant Exposure (1500 hrs)	1500 hrs
	a) Gray scale rating (not worse than)	Rating 3	Rating 4
	b) Apperance (min.)	Rating 4	Rating 4
16	Resistance to UV light	After 1500 hrs Exposure	1500 hrs
	a) Gray scale rating (not worse than)	Rating 3	Rating 4
	b) Appearance (min.)	Rating 4	Rating 4
17	Spread of Flame	Class 1	Class 1
	Remark : E (Exterior Grade), D (Serve Use), F (Flame Retardant Grade)		

GREENGUARD GOLD · FSC · CE · European Standard EN 438 · NEMA

ACCESSORIES

 BOX SECTION	 DEAD LOAD BRACKET	 WINDLOAD BRACKET	 U BRACKET
 T - SECTION	 L BRACKET	 NUT BOLT	 FASTERNER
 RIVET	 MOUTH PIECE	 SELF DRILLING SCREW	 PRIMER
 TAPE	 CUTTING MACHINE	 DRILLING MACHINE	
 RIVET GUN	 SILICONE		

PROJECT PICTURES *

SWITZERLAND

SWITZERLAND

TILBURG, HOLLAND

POZNAN, POLAND

LIMASSOL, CYPRUS

PRAGUE, CZECH REPUBLIC

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

CALGARY, CANADA

CALGARY, CANADA

CALGARY, CANADA

CALGARY, CANADA

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

OTTAWA, CANADA

OTTAWA, CANADA

OTTAWA, CANADA

OTTAWA, CANADA

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

LITHUANIA

LITHUANIA

LITHUANIA

LITHUANIA

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

PRAGUE, CZECH REPUBLIC

PRAGUE, CZECH REPUBLIC

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

PRAGUE, CZECH REPUBLIC

PRAGUE, CZECH REPUBLIC

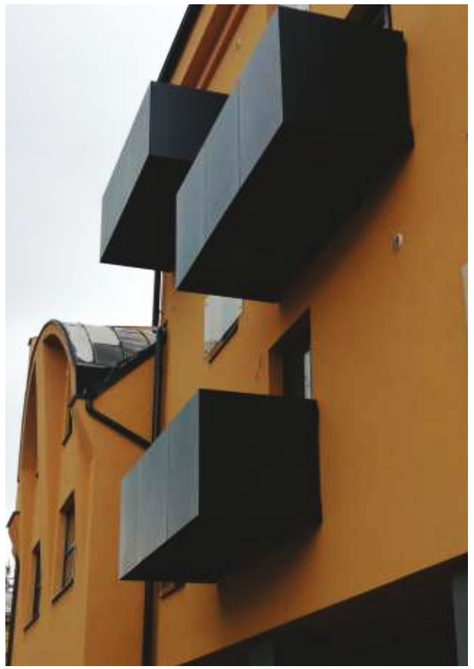
PRAGUE, CZECH REPUBLIC

PRAGUE, CZECH REPUBLIC

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

PRAGUE, CZECH REPUBLIC



PRAGUE, CZECH REPUBLIC

PRAGUE, CZECH REPUBLIC

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

ISRAEL

KAGEL SCHOOL, HOLON

KAGEL SCHOOL, HOLON

KAGEL SCHOOL, HOLON

KAGEL SCHOOL, HOLON

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

JORDAN

JORDAN

JORDAN

JORDAN

JORDAN

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

INDIA

INDIA

INDIA

INDIA

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

INDIA

INDIA

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

INDIA

INDIA

* Project Pictures From Materials Supplied By Us

PROJECT PICTURES *

INDIA

INDIA

INDIA

INDIA

INDIA

* Project Pictures From Materials Supplied By Us

COLOUR RANGE

SOLID

11X Black

AF 702X Black

EB 502X Black

RC 721X Anthracite

AF 705X Anthracite

603X Dark Grey

RC 752X Black Blue

RC 753X Black Brown

604X Grey

751X Grey

RC 886X Grey

AF 704X Grey

EB 501X Grey

621X Grey

RC 719X North Sea

623X Medium Grey

619X Grey

630X Grey

SOLID

615X Metal Grey

610X Grey - F019

RC 718X Tin

627X Light Grey

885X Grey

RC 717X Silver Grey

625X Light Grey

602X Silver Grey

614X Pebble Grey

23X Coffee

716X Brown

RC 720X Ebony

605X Burgandy

RC 723X Maroon

628X Red

612X Gris Fonce

711X Red

606X Green

SOLID

613X Monument Green

712X Green

617X Olive Green

609X Blue - F031

713X Blue

622X White

10X Light Blue White

RC 724X White

AF 701X White

601X Arctic White

618X White

856X Frosty White

851X Cold White

620X White

624X White

13X Egg White

611X Beige - F032

629X Mysore Ivory

SOLID

17X Mysore Ivory

608X Beige - F033

626X Cream

616X Beige

AF 703X Beige

871X Beige(Irish Cream)

714X Orange

715X Yellow

WOODGRAIN

RC 634X
BAMBUS

RC 580X
PLANK SEAR

EXP 51
NOVECENTO PINE

RC 674X
FIGURA OAK

* Scan QR Code for full view

WOODGRAIN

RC 673X
FIGURA OAK

RC 631X
BAMBUS

RC 633X
BAMBUS

RC 632X
BAMBUS

* Scan QR Code for full view

WOODGRAIN

RC 802X
SAMOA TEAK

RC 644X
CANYON MONUMENT OAK

RC 639X
BANANA ABACA

RC 692X
MARACAIBO

* Scan QR Code for full view

WOODGRAIN

RC 679X
DELANO EICHE

RC 693X
GRETA

RC 935X
YOKSHIRE CHESTNUT

RC 642X
CANYON MONUMENT OAK

* Scan QR Code for full view

WOODGRAIN

RC 688X
BEECH

RC 645X
AVEIRO ESCHE

RC 676X
CANYON MALIBU CHESTNUT

RC 694X
ALASKA OAK

* Scan QR Code for full view

WOODGRAIN

RC 662X
MAYFIELD FABRIC

RC 691X
BANDUNG TEAK

RC 803X
WISBA PINE

RC 675X
ASTANA PINE

* Scan QR Code for full view

WOODGRAIN

RC 910X
CRIAZA PEAR

RC 649X
CARIO BEECH

RC 695X
CANYON RENAISSANCE OAK

RC 697X
CANYON AUSTRALIAN BLACKWOOD

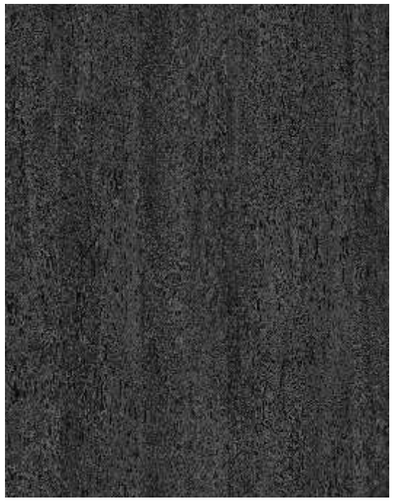
* Scan QR Code for full view

WOODGRAIN

RC 696X
CANYON WATERFORD OAK

RC 651X
STUCCO

RC 668X
SUMATRA TEAK



RC 699X
CALLAHAM

* Scan QR Code for full view

WOODGRAIN

RC 663X
MAYFIELD FABRIC

RC 690X
FUORI

RC 650X
NOTICAL WOOD

RC 652X
NOTICAL WOOD (RED)

* Scan QR Code for full view

WOODGRAIN

RC 698X
APPLE CRATES

RC 643X
CANYON MONUMENT OAK

RC 649X (NEW)
CAIRO BEECH

* Scan QR Code for full view

STONE

RC 667X
CEMENT

RC 637X
BROOKLYN

RC 647X
GREYSTONE

RC 661X
GREYSTONE

* Scan QR Code for full view

STONE

RC 672X
GREY CASPIO

RC 671X
GREY CASPIO

RC 683X
ABBEY ROAD

RC 656X
MONTPELLIER

* Scan QR Code for full view

STONE

RC 655X
BROOKLYN

RC 638X
PINARA

RC 933 X
NEXUS

RC 934 X
NEXUS

* Scan QR Code for full view

STONE

RC 924X
MANHATTAN

RC 689X
COREAN

RC 682X
AVENIDA

RC 918X
Manhattan

* Scan QR Code for full view

STONE

RC 658X
TABO SLATE

RC 687X
MANDU SLATE

RC 685X
MANDU SLATE

RC 686X
MANDU SLATE

* Scan QR Code for full view

STONE

RC 648X
ORIENTAL BROWN

RC 932 XL
SKADI

RC 931 XL
BIANCO ONYX

RC 654X
STATUARIO VENATO

* Scan QR Code for full view

STONE

RC 921X
TORANO

RC 653X
SERAVEZZA

RC 670X
MAREMMA

RC 669X
MAREMMA

* Scan QR Code for full view

STONE

RC 684X
STROMBOLI

RC 646X
BELIDOR

RC 804X

RC 678X
DAMAST

* Scan QR Code for full view

STONE

RC 659X
METALIC OXID

RC 805X

RC 806X

* Scan QR Code for full view