

— 2022

Exterior Living Wall

Fire Guide

Method to Limit Spread of Flame and Restrict Combustibility

ANS Living Wall System

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System Build Up:

Omega Aluminium Carrier Rail

BBA Approved Breathable Membrane

ANS Aluminium Hanging Rail

ANS Fire Retardant Living Wall Module

(The module is manufactured using polypropylene with an optional treatment which gives the modules fire retardant rating of V0 / UL94- see certificate at the end of this document).

Plant Selection:

ANS Global will select plant species that will provide a visually appealing living wall taking into consideration air purification, local ecology and biodiversity. At design stage, species which will have limited leaf drop/ seeding will be chosen and the majority of species will be evergreen to limit the presence of dead leaves/ heads.

Irrigation:

It is essential that irrigation is carefully calibrated to every area of the wall by using latest technology to evenly distribute the water. The electronic valves can be connected to the fire alarm system and when the fire alarm is alerted all the valves will automatically open.

Maintenance:

It is recommended that a professional living wall maintenance company is instructed to maintain the wall immediately after installation as the substrate needs to be kept regularly irrigated. This results in the planting remaining green and healthy with moist soil therefore the whole system has limited combustibility. The irrigation is remotely controlled, to ensure it is calibrated at all times to maintain the correct moisture level in the wall.

As a **condition of planning** it should be stated that the irrigation controls need to be regularly serviced and maintained in working order and the horticultural condition of the wall is monitored monthly.

ANS offer a professional maintenance contract to maintain the living wall on site. This ensures that the Living Wall grows suitably, is pruned accurately and is fed as appropriate. Once plants have finished flowering, the dead flowers are removed and the apical dominance of the plants is kept in check. This ensures a healthy wall, aesthetically and scientifically.

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Regular site visits are carried out to carry out the following work:

- Visually inspect the wall
- Check the moisture levels in wall and adjust irrigation as necessary
- Check the well-being of plants
- Carry out remedial work to wall as found to be necessary
- Remove weeds
- Prune in accordance with seasonal requirements
- Dead head as necessary
- Treat for pest and disease
- Apply feed and nutrient as necessary
- Check and service irrigation plant and ensure correct operation
- Sweep and tidy below wall
- Check run off outlets for blockage
- Replant any plants that have failed due to poor workmanship

Shown below is a sample of a maintenance schedule for an external living wall. Some degree of flexibility must be allowed for as some seasons require more labour than others.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Visually inspect the living wall	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check the moisture levels			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recalibrate irrigation zones		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check the health of plants		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Carry out remedial work if necessary		✓		✓		✓		✓		✓		✓
Remove weeds		✓		✓		✓		✓		✓		
Prune in accordance with season			✓							✓		
Dead head seasonal plants			✓	✓	✓							
Treat for pest and disease						✓	✓		✓			
Apply feed and nutrient as necessary			✓				✓					
Service irrigation system	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check run off outlets for blockage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace any plants that have failed		✓	✓							✓		
Sweep and tidy below wall	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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It is strongly recommended that a maintenance regime is written as a planning condition for a living wall. The wording below can be used as a guide:

Details of the construction, planting irrigation and maintenance regime for the proposed green wall(s)/roof(s) shall be submitted to and approved in writing by the local planning authority before any works thereby affected are begun. The development shall be carried out in accordance with those approved details and maintained as approved for the life of the development unless otherwise approved by the local planning authority.

REASON: To limit the combustibility of the installation by ensuring moist soil, green foliage and limited leaf/ seed drop. To assist the environmental sustainability of the development and provide a habitat that will encourage biodiversity in accordance with the following policies of the Local Plan: TBC



DATA SHEET

NILENE E V0 LSZH

Polypropylene copolymer halogen free flame retardant UL94 V0, good flow and mechanical properties. It fulfills RoHS decree.

UL94 V0 all colours approved at 1,6 mm.

Available: all colours, UV stabilized (L).

Pre-heater:	DRYING - conditions 80 - 90°C / 1 h	Melt temperature:	190 - 220°C
Dryer:	70 - 80°C / 1 h	Mould temperature:	40 - 60°C
		Rate of injection:	MEDIUM - HIGH

PROPERTY	METHOD	unit	VALUE	condition
ELECTRICAL				
Tracking Resistance (CTI - Method A)	IEC 60112	Volt	600	
Electric Strength	IEC 60243-1	kV/mm	25	
PHYSICAL				
Melt Flow Rate (MFR)	ISO 1133	g/10 min	20	230°C - 2,16 kg
Density (23 °C)	ISO 1183	g/cm ³	1,05	
Water Absorption (24h / 23°C)	ISO 62	%	0,1	
Mould Shrinkage (Parallel)	Internal method	%	1,2	
Mould Shrinkage (Normal)	Internal method	%	1,2	
MECHANICAL				
IZOD Notched Impact	ASTM D256	J/m	25	-20°C
IZOD Notched Impact	ASTM D256	J/m	50	+23°C
Flexural Modulus	ISO 178	Mpa	1750	Speed 1 mm/min
Elongation at Break	ISO 527-1,2	%	20	Speed 50 mm/min
Tensile Yield Strength	ISO 527-1,2	Mpa	21	Speed 50 mm/min
FLAMMABILITY				
Oxygen index	ASTM D2863	%	28	
Flame Behaviour (3,2 mm)	UL94	Class	V0	
Flame Behaviour (1,6 mm)	UL94	Class	V0	UL approved
Glow Wire Flammability Index-GWFI (1,6 mm)	IEC 60695-2-12	°C	960	
Glow Wire Ignition Temperature - GWIT (1,6 mm)	IEC 60695-2-13	°C	750	
THERMAL				
Softening Temperature - 1 kg (VST/A/50)	ISO 306	°C	154	50°C / h
Softening Temperature - 5 kg (VST/B/50)	ISO 306	°C	72	50°C / h
Deflection Temperature 1,80 MPa (HDT A)	ISO 75A	°C	60	120°C / h
Ball Pressure Test	IEC 60695-10-2	°C	125	
Continuous service temperature (20.000 h)	IEC 60216	°C	80	
Coefficient of linear thermal expansion	ISO 11359-1,-2	K ⁻¹	7x10exp(-5)	
Deflection Temperature 0,45 MPa (HDT B)	ISO 75B	°C	130	120°C / h

These value are for natural color only. Colorant or other additives may alter some or all of these property. The data listed here fall within the normal range of product properties, but they should not be used to establish specification limits nor used alone as the basis of design.

