TECHNICAL SPECIFICATIONS

Decomposition of concrete is a common phenomenon particularly in water less desert regions or in areas where high humidity and temperatures are prevalent such as in coastal regions. The excessive heat and dry winds cause shrinkage and cracking to concrete. The salts present in water (ground and atmospheric) cause disintegration of concrete by chemical reactions. Concrete is a calcium-aluminum-hydrate crystal which reacts with sulfate salts producing Calcium-Sulpho-Aluminate crystals, which have 227% greater volume than the original concrete crystals leading to cracks and deterioration in concrete.

EPDM membrane based roofing protection, is an application developed in the USA almost four decades ago and continues to be one of the most popular applications of the polymer.

EPDM Single Ply Waterproofing System is specially de- signed to protect all reinforced concrete structures on or under the ground in the Arabian Peninsula. Due to exceptional weather and water resistance, TR-EPDM sheets are used for the protection of rooftops of commercial buildings, residential buildings, Airport Terminal buildings and any structure where protection from rain water seepage is of prime importance.

4.1 EPDM Membrane (ProM-075, ProM-100, etc.)

DESCRIPTION

The EPDM is a cured single-ply synthetic roofing membrane made of ethylene, propylene, diene, terpoly- mer. Depending on roofing dimensions, the waterproofing surface may be seamless. In other situation, seams can be made using adhesives or tape.

The standard gauge thickness of RUBBERGUARD EPDM Membranes is 1.20mm and 1.50mm. However upon customer request membranes of any thickness ranging from 0.75 to 3.0mm can be supplied.

PREPARATION

Product: Allow the membrane to relax for approximately 30 minutes before installation.

Substrate: Roofing structure need to be stable enough to support the temporary loading. Substrate needs to be clean, smooth, dry and free of sharp edges, loose or foreign materials, oil, grease and other materials that may damage the membrane.

APPLICATION

Install EPDM membrane in accordance with current specifications and details.

COVERAGE

The dimensions of the membrane are calculated to cover the seam overlaps (75 - 100mm for standard seams – 180mm for B.I.S) and upstands. Provide an additional length (100mm) at upstands for easy manipulation.

PHYSICAL

- ✓ Elastomeric membrane with a good combination of high elasticity and tensile strength.
- ✓ Water-resistant.
- ✓ Temperature stable from – 45 °C to 130 °C
- ✓ Retains its elasticity at low temperature and resistance to temperature shocks up to 250 °C.
- ✓ Excellent resistance to alkali rains, less resistant to oil products. Contact with some kind of oils, petroleum products, hot bitumen and grease must be avoided.
- ✓ Excellent resistance to UV radiation and ozone concentration.

TECHNICAL

Base	EPDM
Colour & Finish	Black, Fabric Finish/ smooth finish
Solvents	None
Solids (%)	100
State	Cured
Storage	Store the membrane in a dry place until use.

TECHNICAL SPECIFICATIONS - EPDM WATERPROOFING MEMBRANE

NO.	PROPERTY		TEST STANDARD	SPECIFIED VALUES**	TYPICAL
1	Specific Weight, kg/m^2	0.75 mm thick sheet	--	--	0.90±0.20
		1.00 mm thick sheet	--	--	1.20±0.20
		1.14 mm thick sheet	--	--	1.36±0.20
		1.20 mm thick sheet	--	--	1.44±0.20
		1.50 mm thick sheet	--	--	1.80±0.20
		2.00 mm thick sheet	--	--	2.40±0.20
2	Tolerance on nominal gauge		ASTM D 412	±10%	± 10%
3	Texture & Color		Visual Check	--	Fabric Finish, Black
4	Tensile strength, min., MPa		ASTM D 412	9.0	10.5
5	Elongation at break, min., %		ASTM D 412	300	475
6	Tear strength, min., kN/m		ASTM D 624 Die C	26.3	34.0
7	Factory Seam Strength, Min, Kn		ASTM D 816 Method B (Modified)	8.8 OR Membrane Rupture	Membrane Rupture
8*	Brittleness Temperature, ^{0}C		ASTM D 746	- 45	- 55
9*	Resistance to heat ageing (Properties after 168 hrs. exposure @ 116 $^\circ$C)		ASTM D 573	--	--
	Tensile strength, min., MPa		ASTM D 412	8.3	10.1
	Elongation at break, %		ASTM D 412	200	230
	Tear strength, kN/m		ASTM D 624	21.9	31.5
	Linear Dimensional Change, Max, %		ASTM D 1204	±1.0%	- 0.5
10*	Ozone Resistance Condition after exposure to 100 pphm ozone in air for 168 hrs @ 40^{0}C (Sample at 50% strain)		ASTM D 1149	No Cracks	No Cracks
11*	Resistance to water absorption, Change in mass, max, after 168 hrs immersion @ 70^{0}C, %		ASTM D 471	+ 8, - 2	+ 1.8
12*	Resistance to outdoor (UV) weathering Xenon Arc, 7560 kJ/m^2 total radiant exposure at 0.70 W/m^2 irradiance, 80^{0}C black panel temperature		ASTM G 151	No Cracks, No Crazing	No Cracks, No Crazing
13*	Sheet Composition,Weight % of Polymer(EPDM),min, %		ASTM D 297	--	100
14*	Water Vapor Permeability, max, perms		ASTM E 96 (Proc B or BW)	0.10	0.05

* Not a routine quality control test due to the time required / complexity of the test. However, all tests are performed on a statistical basis to ensure overall long-term performance of the sheeting.

ASTM D 4637– Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane

ASTM D6134 – Standard Specification for Vulcanized Rubber Sheets Used in Waterproofing Systems (Type I)

- The above results are generated by tests believed to be accurate and reliable. However, due to normal variations between samples and differences in testing methods, conditions and apparatus, **Promax** does not guarantee duplication of these results at all time. All values refer to the material leaving the factory. All warranty claims are subject to the terms of contract. Product specifications are subject to change without prior notice