

Typical stone gradings

Typical test pressures (kPa) ₁	Waste depth (m)	10	20	20	20	30	30	32	40	Maximum stone size (mm)
		5-10	5-20	10-20	20	10-30	20-30	16-32	20-40	Stone grading (mm)
245	10	HPS5	HPS6	HPS6	HPS7	HPS9	HPS11	HPS9	HPS35	Geotextile grade
370	15	HPS6	HPS7	HPS7	HPS11	HPS11	HPS12	HPS11	HPS35	
490	20	HPS7	HPS9	HPS9	HPS14	HPS12	HPS14	HPS12	HPS40	
615	25	HPS8	HPS9	HPS11	HPS17	HPS14	HPS17	HPS14	HPS40	
735	30	HPS9	HPS11	HPS14	HPS17	HPS17	HPS19/22	HPS19/22	HPS40	
860	35	HPS11	HPS14	HPS17	HPS17	HPS17	HPS22/25	HPS22/25	HPS40	
980	40	HPS11	HPS17	HPS17	HPS19	HPS19/22	HPS30/35	HPS30/35	x	
1105	45	HPS14	HPS17	HPS19	HPS22	HPS25/30	HPS35/40	HPS35/40	x	
1225	50	HPS17	HPS17	HPS22	HPS30	HPS35/40	HPS35/40	HPS35/40	x	

Notes:

1. Typical test pressures are based on a waste density of 1000kg/m³ using The Environmental Agency standard calculation for accelerated testing: Depth of waste x Density x Acceleration due to gravity (9.81 x 10⁻³m/sec²) x Safety factor (2.5)
2. Assumes sub-rounded stone & waste density of 1t/m³.
3. Two grades are shown where the loading conditions are more severe and the angularity of the stone is more critical. The lower grade is predicted for well-rounded stone and the higher grade for angular stone.
4. x denotes that no solution is possible with a single layer of geotextile within the limiting strain of 0.25% required by The Environment Agency. Please contact GEOfabrics Limited for an alternative protection solution.
5. The data contained in this table is for guidance only. The geotextile grade should be confirmed by cylinder testing with a sample of the stone to be used & at a load that simulates the waste depth.
6. Please contact GEOfabrics to arrange a complementary UKAS accredited cylinder test to either Environment Agency Methodology for cylinder testing of protectors for geomembranes (UK) or Determination of the long-term protection efficiency of geotextiles in contact with geosynthetic barriers EN 13719.

16/6/09

**GEOfabrics Limited, Skelton Grange Rd, Stourton
Leeds LS10 1RZ, United Kingdom
Tel: 0113 202 5678 www.geofabrics.com Fax: 0113 202 5655**