

Comparison Conventional Blankets

Compressibility Deflection

Item #	Brand/Model	Sample #/Batch #	Thickness					Deflection				Comp. Loss %	Gauge Loss @ kPa					Hysteresis			Elastic Energy (EE) Nmm	Damping Capacity (DC) %	Test Time s						
			D0	D01	D04	D4k/2	D5k/2	D1k	D4k	D5k	D1		D4	D5	Df1	Df5	Dfp1	Dfp5	1 st cycle	60				1060	2060	Wk/2	Wk	Energy (HE) Nmm	
1	C / II	31F/green	1,95	1,90	1,89	1,81	1,83	1,81	1,77	1,79	1,72	1,71	1,71	236	176	12,1	9,3	25,3	55	84,8	64	20	5	17	16	18	117	15,3	107,2
2	F / IX	32F/brown	1,91	1,86	1,85	1,77	1,78	1,76	1,73	1,74	1,67	1,67	1,67	234	178	12,2	9,6	23,9	53	84,9	62	20	6	16	16	17	115	14,9	107,2
3	E / VII	33F/grey	1,97	1,89	1,87	1,78	1,80	1,78	1,73	1,75	1,67	1,66	1,66	296	214	15,1	11,4	27,7	82	88,3	93	30	11	24	22	27	139	19,7	128,2
4	E / VIII	34F/grey	1,91	1,84	1,82	1,73	1,75	1,74	1,69	1,71	1,64	1,63	1,62	274	202	14,3	11,1	26,2	73	84,8	86	33	14	20	20	25	132	18,8	121,0
5	K / I	35F/-	1,96	1,88	1,87	1,76	1,79	1,76	1,71	1,74	1,65	1,65	1,64	310	223	15,8	12,0	28,0	82	85,3	96	27	9	29	27	27	145	18,7	134,6

LEGEND

Test Details

Standard: ISO 12636 section 4.4
 Equipment: Lloyd LR 10K Plus
 Speed: 1 mm/min
 Markers: D0 up to D5
 Test Time: (D5-D0) s

Thickness (mm)

D0; D01; D04: @ 60kPa
 D4k/2; D5k/2: @ 560kPa
 D1k; D4k; D5k: @ 1060kPa
 D1; D4; D5: @ 2060kPa

Deflection

Df1 = (D0 - D1) mm
 Df5 = (D04 - D5) mm
 $Dfp1 = \left[\frac{(D0 - D1)}{D0} * 100 \right] \%$
 $Dfp5 = \left[\frac{(D04 - D5)}{D04} * 100 \right] \%$

Compressive Loss

Deflection reduction from the 1st to the 5th compression cycles.
 $CL = \left[\frac{(Df1 - Df5)}{Df1} * 100 \right] \%$

Gauge Loss @

60kPa: 1st Cycle: (D0 - D01) μm
 1st0%: 1st Cycle/Full Test %
 $\left[\frac{(D0 - D1)}{(D0 - D04)} * 100 \right] \%$
 Full Test: (D0 - D04) μm
 1060kPa: (D1k - D5k) μm
 2060kPa: (D1 - D5) μm

Hysteresis

Values to be linked to a specific stress cycle
 W(window): Gauge variation due to stress history
 Wk/2: Gauge variation @ 560kPa (D5k/2 - D4k/2) μm
 Wk: Gauge variation @ 1060kPa (D5k - D4k) μm
 HE: Heat generated in one cycle (D5 - D4) Nmm
 EE: Elastic deformation energy (D5 - D04) Nmm
 DC: Damping Capacity $\left[\frac{(D5 - D4)}{(D5 - D04)} * 100 \right] \%$





