



CONSTRUCTION INDUSTRY

Profile, solid, light-colored

Building profile gray, moderate gray scale change after artificial weathering

65 Shore A, EPDM, peroxide cure

Start formulation RAL GZ 716/1 B/II

Guide formulations of HOFFMANN MINERAL	M 586.3/19	M 586.3/28	best formulation, trial product M 586.3 A	best formulation, commercial product M 586.3 B	economic formulation, commercial product M 586.3 C
Keltan 778Z)*	100.00	100.00	100.00	100.00	100.00
Tinuvin 123	1.50	0.75	1.50	1.50	1.50
Chimassorb 944 LD	0.75	0.75	0.75	0.75	0.75
Vulkanox ZMB2/C-5	0.75	0.75	0.75	0.75	0.75
Kronos 2222	20.00	20.00	20.00	20.00	20.00
Trigonox 29-40B-pd	5.00	3.00	3.00	3.00	3.00
Perkadox 14-40B-pd	5.00	3.00	3.00	3.00	3.00
Rhenofit TRIM/S	1.00	1.00	1.00	1.00	1.00
Primol 352	30.00	30.00	30.00	30.00	30.00
Corax N 550/30	0.50	0.50	0.50	0.50	0.50
TP 2005087	155.00	155.00	155.00	---	---
AKTISIL PF 777	---	---	---	155.00	---
AKTISIL VM 56	---	---	---	---	155.00
Total phr	319.50	314.75	315.50	315.50	315.50
Density	g/cm ³ 1.41	1.41	1.41	1.41	1.41

In practice, 5-10 phr calcium oxide have to be added to the formulation.

)* No longer available. Recommended: Keltan 5470C

The trial product TP 2005087 performed best, shown in M 586.3/19 and M 586.3/28.

Instead of the trial product, AKTISIL PF 777 can be used as the best commercial product.

AKTISIL VM 56 represents a more economical alternative, however with moderate result in gray scale change.

The start formulations fulfill not completely the requirements of the gray scale change, however they show nevertheless good mechanical properties also still after artificial weathering. Thus they can be used as basis for further optimizations.



			M 586.3/19	M 586.3/28	best formulation, trial product M 586.3 A	best formulation, commercial product M 586.3 B	economic formulation, commercial product M 586.3 C
Mooney Viscosity							
ML (1+4) 100°C	DIN 53523, T3	MU	73.2	---	---	---	---
Mooney Scorch							
ML (5 MU) 100°C	DIN 53523, T4	min	15.5	---	---	---	---
Rotorless curemeter, 180°C							
Mmin	DIN 53529, T3	Nm	0.291	0.190	---	---	---
Mmax	DIN 53529, T3	Nm	0.993	0.847	---	---	---
t ₅	DIN 53529, T3	min	0.42	0.42	---	---	---
t ₉₀	DIN 53529, T3	min	4.03	4.00	---	---	---
Physical properties							
Press cure 5 min @ 180°C							
Hardness	DIN ISO 7619-1	Shore A	72	70	---	---	---
Modulus 50 %	DIN 53504, S2	MPa	2.4	2.3	---	---	---
Modulus 100 %	DIN 53504, S2	MPa	4.2	4.0	---	---	---
Modulus 200 %	DIN 53504, S2	MPa	6.7	6.4	---	---	---
Modulus 300 %	DIN 53504, S2	MPa	8.4	8.1	---	---	---
Tensile strength	DIN 53504, S2	MPa	8.7	9.6	---	---	---
Elongation at br.	DIN 53504, S2	%	350	450	---	---	---
Rebound.	DIN 53512	%	58	59	---	---	---
Tear resistance	DIN ISO 34-1, A	N/mm	5.6	12.2	---	---	---
Compression set 22 h @ 100°C, 25 % deflection	DIN ISO 815, B	%	8.1	9.3	---	---	---
Artificial weathering							
Rating RAL-GZ 716/1 B/II			good	good	very good	good	moderate
Air aging, 168 h @ 100°C, DIN 53508							
Hardness		Shore A	76	74	---	---	---
Modulus 50 %		MPa	3.6	2.5	---	---	---
Modulus 100 %		MPa	6.8	4.5	---	---	---
Modulus 200 %		MPa	---	7.5	---	---	---
Modulus 300 %		MPa	---	9.5	---	---	---
Tensile strength		MPa	9.0	10.7	---	---	---
Elongation at break		%	180	405	---	---	---
Rebound		%	56	57	---	---	---
Tear resistance		N/mm	3.3	10.8	---	---	---
Δ Hardness		Shore A	+4	+4	---	---	---
Δ Modulus 50 %		%	+51.9	+9.1	---	---	---
Δ Modulus 100 %		%	+61.9	+13.3	---	---	---
Δ Modulus 200 %		%	---	+16.8	---	---	---
Δ Modulus 300 %		%	---	+17.5	---	---	---
Δ Tensile strength		%	+3.5	+11.8	---	---	---
Δ Elongation at break		%, rel.	-49	-10	---	---	---
Δ Rebound		%, rel.	-3.5	-3.4	---	---	---
Δ Tear resistance		%	-41.8	-11.1	---	---	---

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