

Family Name	: NILOSHILED
Product Name	: NILOSHILED SBS
Product Full Name	: NILOSHILED SBS 400 Sand 4mm S/E
Type of Product	: an Elastomeric SBS
Type of Reinforcement	: Double (Polyester & Fiberglass)

Sampling methodology According to EN 13416:2001

Batch No. 304 1 03

Compound	: SBS -20
Reinforcement	: Polyester MAT-160 & Fiberglass M65-R12
Upper Surface	: SAND
Lower Surface	: POLYETHYLENE
Production date	: 02/11/2021

System Applied	: Under layer (Bottom layer) or intermediate layer in multilayer system.
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M	TEST	STANDARD	UNIT	TOLLERANCE	SPECIFIED VALUES	ACTUAL MEASURING VALUE	REF. REPORT NO.	Date of Measure	REMARKS
*	Visual Defects	EN 1850-1	-	Pass	Passed	Pass	1275/1850-1	03/11/2021	
*	Thickness	EN 1849-1	mm	-5%	4	4.00	1275/1849-1	03/11/2021	
*	Weight	EN 1849-1	kg/m2	-10%	-	-	-	-	
*	Length	EN 1848-1	m	-1%	10	10.01	1275/1848-1	03/11/2021	
*	Width	EN 1848-1	m	-1%	1	1.000	1275/1848-1	03/11/2021	
*	Straightness	EN 1848-1	-	20mm/10m	± 10	3	1275/1848-1	03/11/2021	
*	Flexibility at low temperature	EN 1109	°C/ø mm *	≤	-20	U.S. : -20 L.S. : -20	1275/1109	03/11/2021	
*	Flow resistance at elevated Temp.	EN 1110	°C	≥	110	110	1275/1110	03/11/2021	
*	Water Impermeability (Water tightness)	EN 1928 method A	60 KPa	Passed	Passed	60	4994/1928	04/11/2021	
-	Vapour Permeability	EN 1931	μ	-	20000	20,000	use the min. value as per Norm.		
*	Tensile Strength Longitudinal	EN 12311-1	N/50mm	-20%	800	860	Machine report	04/11/2021	
*	Tensile Strength Transversal	EN 12311-1	N/50mm	-20%	500	556	Machine report	04/11/2021	
*	Elongation @ Break Longitudinal	EN 12311-1	%	-15 absolute (polyester only)	40	37	Machine report	04/11/2021	
*	Elongation @ Break Transversal	EN 12311-1	%	-15 absolute (polyester only)	45	41	Machine report	04/11/2021	
-	Tear resistance (nail shank) :Longitudinal	EN 12310-1	N	-30%	200	271	Machine report	04/11/2021	
-	Tear resistance (nail shank) :Transversal	EN 12310-1	N	-30%	250	321	Machine report	04/11/2021	
-	Dimensional stability	EN 1107-1	%	≤	± 0.3	-	-	-	
-	Resistance to Static loading	EN12730 method A	kg	Min.	15	20	4994/12730	04/11/2021	
-	Resistance to Impact	EN12691 method B	mm	Min.	500	800	4994/12691	04/11/2021	
-	Peel resistance of joints	EN 12316-1	N/50mm	-20N	-	-	Machine report	-	
-	Shear resistance of joints :Longitudinal	EN 12317-1	N/50mm	-20%	800	-	Machine report	-	
-	Shear resistance of joints:Transversal	EN 12317-1	N/50mm	-20%	500	-	Machine report	-	
-	Durability (Flexibility after artificial ageing)	EN 1296/ EN1109	°C/ø mm *	≤	-10	U.S. : - L.S. : -	-	-	
-	Durability (Heat Flow after artificial ageing)	EN 1296/EN1110	°C	≥	90	-	-	-	
-	Durability (Visible defects after U.V ageing)	UNI EN 1297/EN1850-1	-	-	Passed	-	-	-	
-	External Fire Performance	ENV 1187/EN 13501-5	Class	-	F roof	F roof	No Performance Determined		
*	Reaction of Fire	EN 11925-2/EN 13501-1	Class	-	E	E	-	-	
-	Watertightness after stretching at low temperature	EN13897	%	-	-	-	-	-	
-	Adhesion of Granules	EN12039	%	Max.	-	-	-	-	
-	Root Resistance	EN 13948	-	NPD	NPD	NPD	-	-	
-	Dangerous Substances	-	-	-	Free	Free	No Dangerous substances used		

* is sign for the mandatory (necessary) tests as per specified for system used according to EN 13707:2013

Flexible sheets for Waterproofing
Determination of Length, Width, and Straightness
EN 1848-1:2000

Date of testing : 03/11/2021 Wednesday
Report No. : 1275/1848-1/2021

Product Identification

Product FULL name : NILOSHIELD-SBS 4.00 mm S/E
EOC # [Client] : LOCAL - EGYPT
Date of production : 02/11/2021 Tuesday
Shift of production : Shift 3
Compound type : SBS -20
Reinforcement type : M65-R12 + MAT-160

code:011/6

Roll Length : 10 m m
Rolls/Pallet : 23 m R/P.

Batch No. : 3041 1 03
Upper surfacing : (S00) Sand - Rashidi (200 micron)

Lower surfacing : (E00) (Black Film) HD PE Film

Sampling

	Length	Width	Straightness
Sampling	According to EN 13416		
Number of samples	1 Sample for all		
Test Piece	1 complete undamaged roll		
Dimensions of samples	The dimension of the roll		
Measurements	Length of roll	Width of roll	Max. Deviation
Expression of results	Length nearest to 10 mm	Width nearest to 1 mm	Max. deviation nearest to 1 mm ($\pm$ -100)
Conditioning before testing	Not Required except in case of dispute		

Results

	Length	Width	Straightness
Measured Value	10010.0 mm	1000.00 mm	103.0 mm
			($\pm$ -100) Max. deviation
Expressed Value	10,010 mm	1,000.0 mm	3 mm

Laboratory Quality Control

Chemist

Flexible sheets for Waterproofing
Determination of Thickness and Mass per Unit Area
EN 1849-1:2000

Date of testing : 03/11/2021 Wednesday
Report No. : 1275/1849-1/2021

Product Identification

Product FULL name : NILOSHIELD-SBS 4.00 mm S/E
EOC # [Client] : LOCAL - EGYPT
Date of production : 02/11/2021 Tuesday
Shift of production : Shift 3
Compound type : SBS -20
Reinforcement type : M65-R12 + MAT-160

Roll Length : 10 m m
Rolls/Pallet : 23 m R/P.

Batch No. : 3041 1 03
Upper surfacing : (S00) Sand - Rashidi (200 micron)

Lower surfacing : (E00) (Black Film) HD PE Film

Sampling

	Thickness	Mass per Unit Area
Sampling	According to EN 13416	
Number of samples	1 sample	3 cutting sample from 1
Test Piece	> 800 mm * 100 mm	> 800 mm * > 400mm
Dimensions of samples	use the test piece	100 mm * 100 mm
Measurements	10 places (values)	3 weights (values)
Expression of results	Mean of 10 values to nearest 0.1 mm	Mean of 3 values to nearest 0.1 g multiply by 10 expressed in Kg/m ²
Conditioning before testing	Not Required except in case of dispute	20 hr. at (23 ± 2) ⁰ c and humidity (50±5)%

Results

	Thickness	Mass per Unit Area
Value 1	4.03 mm	56.00 g
Value 2	3.96 mm	57.30 g
Value 3	4.06 mm	59.20 g
Value 4	4.00 mm	
Value 5	4.00 mm	
Value 6	4.00 mm	
Value 7	4.00 mm	
Value 8	4.04 mm	
Value 9	3.97 mm	
Value 10	3.94 mm	
Average	4.00 mm	57.5 g / 10 = 5.8 Kg/m ²

Laboratory Quality Control

Chemist



Flexible sheets for Waterproofing
Determination of Flexibility at Low Temperature
EN 1109:2013

Date of testing : 03/11/2021 Wednesday
Report No. : 1275/1109/2021

Product Identification

Product FULL name : NILOSHIELD-SBS 4.00 mm S/E
EOC # [Client] : LOCAL - EGYPT
Date of production : 02/11/2021 Tuesday
Shift of production : Shift 3
Compound type : SBS -20
Reinforcement type : M65-R12 + MAT-160

Roll Length : 10 m m
Rolls/Pallet : 23 m R/P.

Batch No. : 3041 1 03
Upper surfacing : (S00) Sand - Rashidi (200 micron)

Lower surfacing : (E00) (Black Film) HD PE Film

Sampling

	Flexibility at Low Temperature
Sampling	According to EN 13416
Number of samples	10 sample (5 + 5)
Test Piece	Cut Longitudinal Direction away from edges 150 mm
Dimensions of samples	140±1 mm * 50±1 mm
Measurements	10 measurements (5 + 5)
Expression of results	Temp. degree in celliseous applied on upper and lower surfaces
Conditioning Before Testing	4 Hr. at 23±2 °c without PE film and separated samples on siliconized paper
Conditioning of Test specimens	1 Hr. ± 5 min. at desired Temp. immersed in Alcohol/water path

Results

	Upper Surface (1-5)		Lower Surface (1*-5*)	
Specimen 1/1*	-20	°C	-20	°C
Specimen 2/2*	-20	°C	-20	°C
Specimen 3/3*	-20	°C	-20	°C
Specimen 4/4*	-20	°C	-20	°C
Specimen 5/5*	-20	°C	-20	°C
Result	-20	°C	-20	°C

Laboratory Quality Control

Chemist



Flexible sheets for Waterproofing
Determination of Flow Resistance at Elevated temperature
EN 1110:2010

Date of testing : 03/11/2021 Wednesday
Report No. : 1275/1110/2021

Product Identification

Product FULL name : NILOSHIELD-SBS 4.00 mm S/E
EOC # [Client] : LOCAL - EGYPT
Date of production : 02/11/2021 Tuesday
Shift of production : Shift 3
Compound type : SBS -20
Reinforcement type : M65-R12 + MAT-160
Batch No. : 3041 1 03
Upper surfacing : (S00) Sand - Rashidi (200 micron)
Lower surfacing : (E00) (Black Film) HD PE Film

code: 011126

Roll Length : 10 m m
Rolls/Pallet : 23 m R/P.

Sampling

	Flow Resistance at Elevated temperature
Sampling	According to EN 13416
Number of samples	3 samples
Test Place	Cut rectangular sample away from edge 150 mm
Dimensions of samples	100±1 mm * 50±1 mm to 90mm
Measurements	Distance of whole sample before test and after test
Expression of results	Passed at desired temp. if distance ≤ 2.0 mm and no droplets observed
Conditioning Before Testing	2 Hr. at 23±2 °C without PE film and separated samples on siliconized paper
Duration of Testing	120±2 min. at desired temp.
Conditioning after testing before measuring	at least 120 min at 23±2 °C

Results

	Upper Surface (1)		Lower Surface (1*)	
Specified temp.	110	°C	110	°C
I . Droplets observed	No droplets		No droplets	
II . Difference ΔX*				
Specimen 1/1*	0.17	mm	0.07	mm
Specimen 2/2*	0.07	mm	0.12	mm
Specimen 3/3*	0.15	mm	0.00	mm
Mean	0.1	mm	0.1	mm

* Δx is the difference between initial length of the test specimen and the final length after the test period in mm.

Result	Passed	Passed
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Laboratory Quality Control
Chemist

Flexible sheets for Waterproofing
Determination of Visible defects
 EN 1850-1:2000

Date of testing : 03/11/2021 Wednesday
 Report No. : 1275/1850/2021

Product Identification

Product FULL name : NILOSHIELD-SBS 4.00 mm S/E
 EOC # [Client] : LOCAL - EGYPT
 Date of production : 02/11/2021 Tuesday
 Shift of production : Shift 3
 Compound type : SBS -20
 Reinforcement type : M65-R12 + MAT-160
 Batch No. : 3041 1 03
 Upper surfacing : (S00) Sand - Rashidi (200 micron)
 Lower surfacing : (E00) (Black Film) HD PE Film

File: 03/51

Roll Length : 10 m m
 Rolls/Pallet : 23 m R/P.

Sampling

	Visible Defects
Sampling	According to EN 13416
Number of samples	1 Complete roll
Test Piece	The Complete Roll
Dimensions of samples	Full Roll Dimension
Measurements	5 main visual examination
Expression of results	Visual information by naked eye
Conditioning Before Testing	Not required but in case of dispute conditioning at least 20 hr. at 23 ± 2 °C

Results

	Examination of Top Surface	Examination of Underside
Blisters	free	free
Cracks	free	free
Holes	free	free
Naked Spots	free	free
Other Noticeable defects	-	-

Laboratory Quality Control

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Flexible sheets for Waterproofing
Determination of Watertightness
EN 1928:2000

Date of testing : 04/11/2021 Thursday
Report No. : 4994/1928/2021

Product Identification

Product FULL name : NILOSHIELD SBS 4.00 mm S/E
EOC # [Client] : LOCAL - EGYPT
Date of production : 02/11/2021 Tuesday
Shift of production : Shift 3
Compound type : SBS -20
Reinforcement type : M65-R12 + MAT-160
Batch No. : 304 1 03
Upper surfacing : (S00) Sand - Rashidi (200 micron)
Lower surfacing : (E03) (Bitunil ISO Printed English & English) HD PE Film Printed

Roll Length : 10 m m
Rolls/Pallet : 23 m R/P.

Sampling

Determination of Watertightness		
Method	Method A	Method B (if Applied)
Sampling	According to EN 13416	According to EN 13416
Number of samples	3 from different roll parts	3 from different roll parts
Test Piece	3	3
Dimensions of samples	Circular with Diameter 200 ±2 mm	Equal to slotted plate at least 130 mm
Measurements	at 23±5 °C	at 23±5 °C
Expression of results	Pass:if no color change or Fail:if color change	Pass:if no color change or Fail:if color change
Conditioning before testing	6 Hrs. at 23±5 °C	6 Hrs. at 23±5 °C
Test Duration	24±1 hr.	Assessment after 1 hr, test duration
Pressure applied	60 kPs.	according to specified pressure

Results

Applied Pressure for A			Applied Pressure for B	
60 kPs			-	
	Color Change	Result	Evidence of leakage	Result
	No	PASS	-	-
	No	PASS	-	-
	No	PASS	-	-

Tested and Reported by

Quality Control Responsible

Laboratory Manager



Flexible sheets for Waterproofing
Determination of Resistance to Static loading
EN 12730:2015 Method A

Date of testing : 04/11/2021 Thursday
Report No. : 4994/12730/2021

Product Identification

Product FULL name : NILOSHIELD SBS 4.00 mm S/E
EOC # [Client] : LOCAL - EGYPT
Date of production : 02/11/2021 Tuesday
Shift of production : Shift 3
Compound type : SBS -20
Reinforcement type : M65-R12 + MAT-160
Batch No. : 304 1 03
Upper surfacing : (S00) Sand - Rashidi (200 micron)
Lower surfacing : (E03) (Bitunil ISO Printed English & English) HD PE Film Printed

Roll Length : 10 m m
Rolls/Pallet : 23 m R/P.

Sampling

Determination of Resistance to Static loading	
Sampling	According to EN 13416
Number of samples	1 From part of roll with 10cm exclusion from both roll sides
Test Piece	3
Dimensions of samples	550 mm * 550 mm $\pm$ 2 mm
Measurments	Visual check for cracks or Leakadge
Expression of results	No cracks or Pass at specified load in Kg
Conditioning before testing	24 hrs. at specified test condition (23 $\pm$ 2 °C)
Support	Soft Support Polystyrene
Duration of Test	24 Hrs. at specified test condition (23 $\pm$ 2 °C) for each loading interval.

Results

Applied Loads

	0	5	10	15	20	25	30	35	40	Kg
Sample 1	-	-	-	-	20	-	-	-	-	
Sample 2	-	-	-	-	20	-	-	-	-	
Sample 3	-	-	-	-	20	-	-	-	-	

Max. Load : 20 Kg

Cracks or Leakage

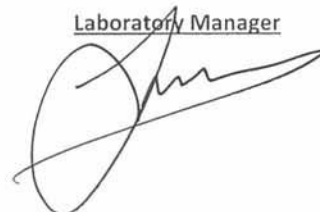
	0	5	10	15	20	25	30	35	40	Kg
Sample 1	-	-	-	-	No	-	-	-	-	
Sample 2	-	-	-	-	No	-	-	-	-	
Sample 3	-	-	-	-	No	-	-	-	-	

End Result : PASS

Tested and Reported by

Quality Control Responsible

Laboratory Manager



Flexible sheets for Waterproofing

Determination of Resistance to Impact

EN 12691:2018 Method B

Date of testing : 04/11/2021 Thursday
Report No. : 4994/12691/2021

Product Identification

Product FULL name : NILOSHIELD SBS 4.00 mm S/E
EOC # [Client] : LOCAL - EGYPT
Date of production : 02/11/2021 Tuesday
Shift of production : Shift 3
Compound type : SBS -20
Reinforcement type : M65-R12 + MAT-160
Batch No. : 304 1 03
Upper surfacing : (S00) Sand - Rashidi (200 micron)
Lower surfacing : (E03) (Bitunil ISO Printed English & English) HD PE Film Printed

Roll Length : 10 m m

Rolls/Pallet : 23 m R/P.

Sampling

Determination of Resistance to Impact	
Sampling	According to EN 13416
Number of samples	1 From different positions of roll with 10cm exclusion from both roll sides
Test Piece	5
Dimensions of samples	150 mm * 150 mm
Measurements	Visual check for cracks or Leakage
Expression of results	No cracks or leakage at specified drop height in mm
Conditioning before testing	24 hrs. at specified test condition ($23 \pm 2^{\circ}\text{C}$)
Support	Soft Support Polystyrene
Drop mass	500 $\pm$ 5 gm including Punching tool
Punching tool	Spherical with diameter 12.7 $\pm$ 1 mm

Results

Applied Loads

	300	350	400	450	500	600	700	800	900	1000	1250	1500
Sample 1	-	-	-	-	-	-	-	800	-	-	-	-
Sample 2	-	-	-	-	-	-	-	800	-	-	-	-
Sample 3	-	-	-	-	-	-	-	800	-	-	-	-
Sample 4	-	-	-	-	-	-	-	800	-	-	-	-
Sample 5	-	-	-	-	-	-	-	800	-	-	-	-

Max. Load : 800 mm

Cracks or Leakage

	300	350	400	450	500	600	700	800	900	1000	1250	1500
Sample 1	-	-	-	-	-	-	-	No	-	-	-	-
Sample 2	-	-	-	-	-	-	-	No	-	-	-	-
Sample 3	-	-	-	-	-	-	-	No	-	-	-	-
Sample 4	-	-	-	-	-	-	-	No	-	-	-	-
Sample 5	-	-	-	-	-	-	-	No	-	-	-	-

End Result : PASS

Tested and Reported by

Quality Control Responsible

Laboratory Manager



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Alexandria , EGYPT

Tensile test extensometer EN 12311

Test type: Tensile
Operator name: EMAD GHONAME
Sample Identification: 304103 TEL
Interface Type: 4200/4300/4400

Instron Corporation
Series IX Automated Materials Testing System 8.24.00
Test Date: 04 November 2021

Sample Rate (pts/sees): 6.6670
Crosshead Speed: 100.0000 mm/min
Second Speed: 0.0000 mm/min
Third Speed: 0.0000 mm/min
Full Scale Load Range: 5.0000 kN
Humidity (%): 50
Temperature: 23 C

Membrane/Thickness NILOSHIELD-SBS 4M S/E ** SAMPLE **

Reinforcement Type *** M65-R12 + MAT-160 ***

Compound / Batch no. SBS -20 Batch No**304103**

Production date 02/11/2021 III

Direction LONGITUDINAL

Sample comments:
Conditioning at least 20 hrs

	Load at Max.Load (N/5cm)	Load at Cursor Point I (N/5cm)	% Strain at Max.Load (%)	% Strain at Cursor Point I (%)
1	790.100	648.590	2.185	36.308
2	863.600	704.420	2.639	35.422
3	912.500	834.090	2.687	36.228
4	897.400	804.560	3.085	35.704
5	839.700	764.290	2.795	39.503
Mean	860.660	751.190	2.678	36.633
S.D.	48.641	75.177	0.326	1.646

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Tensile test extensometer EN 12311

Test type: Tensile
Operator name: EMAD GHONAME
Sample Identification: 304103 TET
Interface Type: 4200/4300/4400

Instron Corporation
Series IX Automated Materials Testing System 8.24. 00
Test Date: 04 November 2021

Sample Rate (pts/secs): 6.6670
Crosshead Speed: 100.0000 mm/min
Second Speed: 0.0000 mm/min
Third Speed: 0.0000 mm/min
Full Scale Load Range: 5.0000 kN

Humidity (%): 50
Temperature: 23 C

Membrane/Thickness NILOSHIELD-SBS 4M S/E ** SAMPLE **

Reinforcement Type *** M65-R12 + MAT-160 ***

Compound / Batch no. SBS -20 Batch No**304103**

Production date 02/11/2021 III

Direction TRANSVERSAL

Sample comments:

Conditioning at least 20 hrs

	Load at Max.Load (N/5cm)	Load at Cursor Point I (N/5cm)	% Strain at Max.Load (%)	% Strain at Cursor Point I (%)
1	567.000	529.660	35.760	36.953
2	589.000	582.810	42.790	44.523
3	535.800	521.610	31.500	32.349
4	613.400	526.970	42.230	44.818
5	475.300	408.850	4.591	43.986
Mean	556.100	513.980	31.374	40.526
S.D.	53.444	63.763	15.690	5.613

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Alexandria , EGYPT

Tensile test ASTM D-5147

Test type: Tensile Instron Corporation
Operator name: EMAD GHONAME Series IX Automated Materials Testing System 8.24.00
Sample Identification: 304103 TAL Test Date: 04 November 2021
Interface Type: 4200/4300/4400

Sample Rate (pts/sees): 10.0000
Crosshead Speed: 50.0000 mm/min Humidity (%): 50
Second Speed: 0.0000 mm/min Temperature: 23 C
Third Speed: 0.0000 mm/min
Full Scale Load Range: 5.0000 kN

Membrane/Thickness NILOSHIELD-SBS 4M S/E ** SAMPLE **

Reinforcement Type *** M65-R12 + MAT-160 ***

Compound / Batch no. SBS -20 Batch No**304103**

Production date 02/11/2021 III

Direction LONGITUDINAL

Sample comments:

Conditioning at least 20 hrs

	Load at Max.Load (N/5cm)	Load at Cursor Point 1 (N/5cm)	% Strain at Cursor Point 1 (%)	% Strain at Max.Load (%)	Load at Cursor Point 1 (KN/m)
1	782.200	774.220	59.887	8.773	15.484
2	713.600	665.500	51.716	7.493	13.310
3	855.000	736.100	56.681	5.787	14.722
4	790.000	789.780	57.463	57.520	15.796
5	875.200	740.400	55.927	6.480	14.808
6	880.200	734.760	58.019	7.467	14.695
Mean	816.033	740.127	56.616	15.587	14.803
S.D.	65.500	42.993	2.752	20.568	0.860

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Alexandria , EGYPT

Tensile test ASTM D-5147

Test type: Tensile Instron Corporation
Operator name: EMAD GHONAME Series IX Automated Materials Testing System 8.24.00
Sample Identification: 304103 TAT Test Date: 04 November 2021
Interface Type: 4200/4300/4400

Sample Rate (pts/secs): 10.0000
Crosshead Speed: 50.0000 mm/min Humidity (%): 50
Second Speed: 0.0000 mm/min Temperature: 23 C
Third Speed: 0.0000 mm/min
Full Scale Load Range: 5.0000 kN

Membrane/Thickness NILOSHIELD-SBS 4M S/E ** SAMPLE **

Reinforcement Type *** M65-R12 + MAT-160 ***

Compound / Batch no. SBS -20 Batch No**304103**

Production date 02/11/2021 III

Direction TRANSVERSAL

Sample comments:
Conditioning at least 20 hrs

	Load at Max.Load (N/5cm)	Load at Cursor Point I (N/5cm)	% Strain at Cursor Point I (%)	% Strain at Max.Load (%)	Load at Cursor Point I (kN/m)
1	540.200	487.240	63.448	59.387	9.745
2	530.000	489.380	55.821	53.373	9.788
3	581.200	402.400	59.666	52.440	8.048
4	541.800	393.820	58.995	54.933	7.876
5	588.000	489.380	65.909	60.573	9.788
6	594.600	572.600	65.348	60.907	11.452
Mean	562.633	472.470	61.531	56.936	9.449
S.D.	28.328	66.199	3.998	3.793	1.324

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Tearing Strength ASTM D-4073-94

Test type: Tensile
Operator name: EMAD GHONAME
Sample Identification: 304103 RAL
Interface Type: 4200/4300/4400

Instron Corporation
Series IX Automated Materials Testing System 8.24.00
Test Date: 04 November 2021

Sample Rate (pts/sees): 10.0000
Crosshead Speed: 100.0000 mm/min
Second Speed: 0.0000 mm/min
Third Speed: 0.0000 mm/min
Full Scale Load Range: 5.0000 kN

Humidity (%): 50
Temperature: 23 C

Membrane/Thickness NILOSHIELD-SBS 4M S/E ** SAMPLE **

Reinforcement Type *** M65-R12 + MAT-160 ***

Compound / Batch no. SBS -20 Batch No**304103**

Production date 02/11/2021 III

Direction LONGITUDINAL

Sample comments:

Conditioning at least 20 hrs

	Load at Max.Load (N)	Avg Ld Between Limits 1 (N)
1	860.700	638.186
2	818.000	616.580
Mean	839.350	627.383
S.D.	30.193	15.278

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Tearing Strength ASTM D-4073-94

Test type: Tensile Instron Corporation
Operator name: EMAD GHONAMI Series IX Automated Materials Testing System 8.24.00
Sample Identification: 304103 RAT Test Date: 04 November 2021
Interface Type: 4200/4300/4400

Sample Rate (pts/secs): 10.0000
Crosshead Speed: 100.0000 mm/min Humidity (%): 50
Second Speed: 0.0000 mm/min Temperature: 23 C
Third Speed: 0.0000 mm/min
Full Scale Load Range: 5.0000 kN

Membrane/Thickness NILOSHIELD-SBS 4M S/E ** SAMPLE **

Reinforcement Type *** M65-R12 + MAT-160 ***

Compound / Batch no. SBS -20 Batch No**304103**

Production date 02/11/2021 III

Direction TRANSVERSAL

Sample comments:

Conditioning at least 20 hrs

	Load at Max.Load (N)	Avg Ld Between Limits 1 (N)
1	538.500	415.209
2	525.900	426.003
Mean	532.200	420.606
S.D.	8.910	7.632

BITUNIL
9 EL Saad El Aaly St. Wadi El Kamar
Alexandria , EGYPT

Tearing Strength EN 12310-1

Test type: Tensile
Operator name: EMAD GHONAME
Sample Identification: 304103 REL
Interface Type: 4200/4300/4400

Instron Corporation
Series IX Automated Materials Testing System 8.24.00
Test Date: 04 November 2021

Sample Rate (pts/sees): 10.0000
Crosshead Speed: 100.0000 mm/min
Second Speed: 0.0000 mm/min
Third Speed: 0.0000 mm/min
Full Scale Load Range: 5.0000 kN

Humidity (%): 50

Temperature: 23 C

Membrane/Thickness NILOSHIELD-SBS 4M S/E ** SAMPLE **

Reinforcement Type *** M65-R12 + MAT-I60 ***

Compound / Batch no. SBS -20 Batch No**304103**

Production date 02/11/2021 III

Direction LONGITUDINAL

Sample comments:

Conditioning at least 20 hrs

	Load at Max.Load (N)	Avg Ld Between Limits I (N)
1	283.900	253.886
2	276.800	251.624
3	268.200	252.939
4	250.600	233.235
5	278.900	252.422
Mean	271.680	248.821
S.D.	13.078	8.751

BITUNIL
9 EL Saad El Aaly St. Wadi El Kamar
Alexandria , EGYPT

Tearing Strength EN 12310-1

Test type: Tensile
Operator name: EMAD GHONAME
Sample Identification: 304103 RET
Interface Type: 4200/4300/4400

Instron Corporation
Series IX Automated Materials Testing System 8.24.00
Test Date: 04 November 2021

Sample Rate (pts/secs): 10.0000
Crosshead Speed: 100.0000 mm/min
Second Speed: 0.0000 mm/min
Third Speed: 0.0000 mm/min
Full Scale Load Range: 5.0000 kN

Humidity (%): 50

Temperature: 23 C

Membrane/Thickness NILOSHIELD-SBS 4M S/E ** SAMPLE **

Reinforcement Type *** M65-R12 + MAT-160 ***

Compound / Batch no. SBS -20 Batch No**304103**

Production date 02/11/2021 III

Direction TRANSVERSAL

Sample comments:

Conditioning at least 20 hrs

	Load at Max.Load (N)	Avg Ld Between Limits 1 (N)
1	298.000	264.853
2	299.600	260.913
3	300.500	276.762
4	286.700	228.720
5	424.300	343.959
Mean	321.820	275.041
S.D.	57.557	42.431