ПЕРСПЕКТИВЫ РАЗВИТИЯ В СЕГМЕНТЕ "РАФИЯ": ОБОРУДОВАНИЕ, СЫРЬЕ, ТЕХНОЛОГИЧЕСКИЙ ПРОЦЕСС

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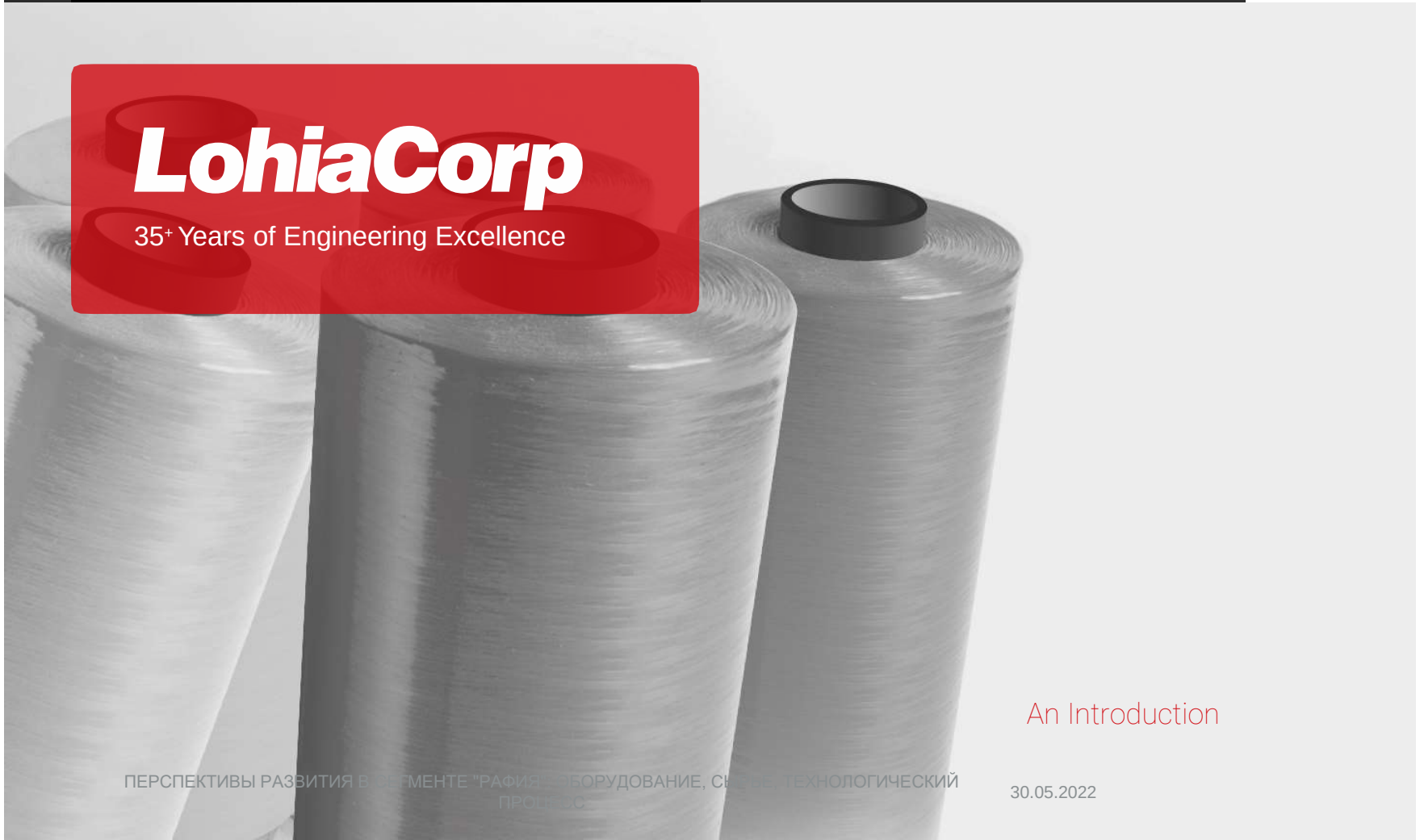
LOHIA GROUP

СИБУР



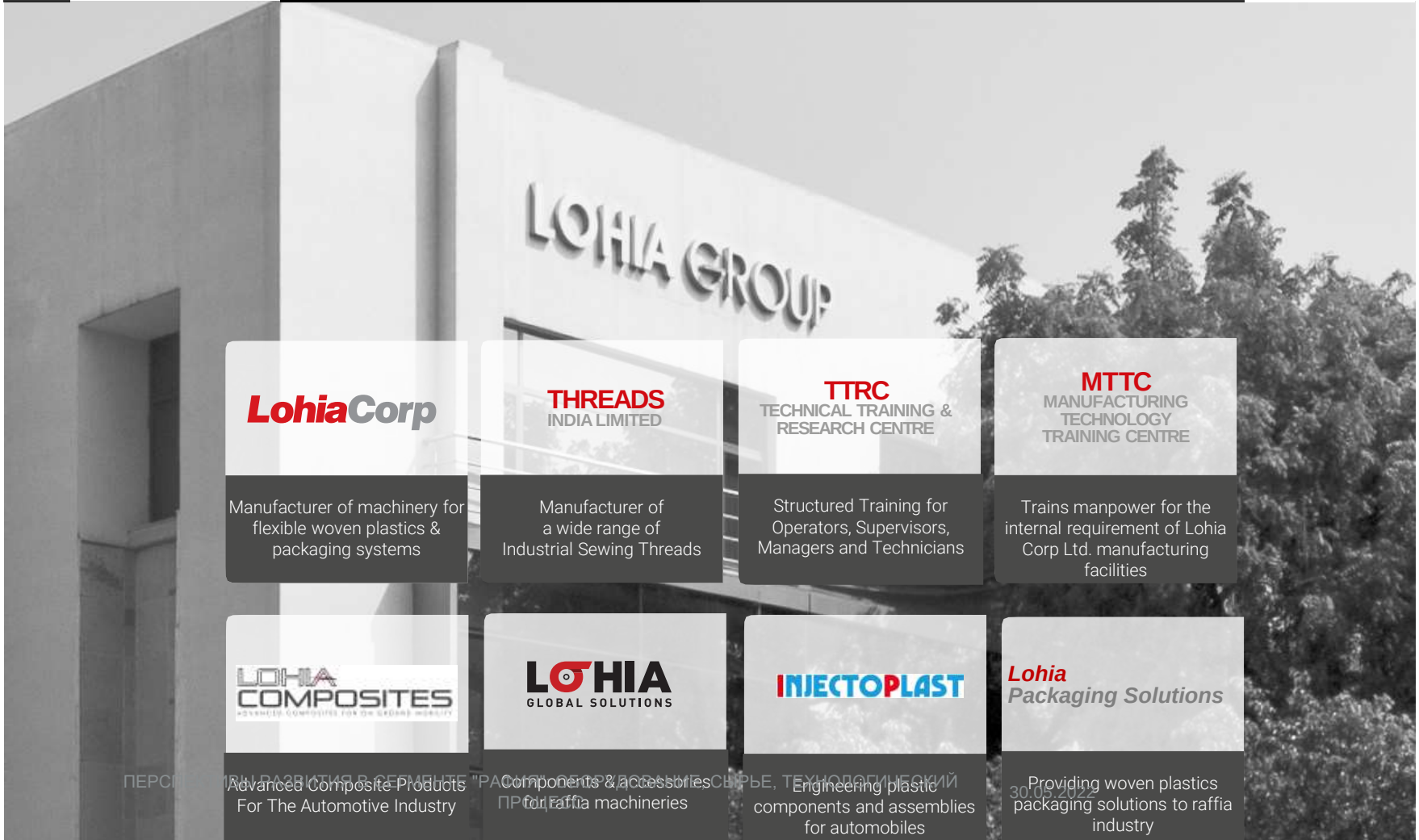
LohiaCorp

35+ Years of Engineering Excellence

An Introduction

ПЕРСПЕКТИВЫ РАЗВИТИЯ В СЕГМЕНТЕ "РАФИЯ - ОБОРУДОВАНИЕ, СЫРЬЕ, ТЕХНОЛОГИЧЕСКИЙ ПРОЦЕСС"

30.05.2022



LohiaCorp

Manufacturer of machinery for flexible woven plastics & packaging systems

THREADS INDIA LIMITED

Manufacturer of a wide range of Industrial Sewing Threads

TTRC TECHNICAL TRAINING & RESEARCH CENTRE

Structured Training for Operators, Supervisors, Managers and Technicians

MTTC MANUFACTURING TECHNOLOGY TRAINING CENTRE

Trains manpower for the internal requirement of Lohia Corp Ltd. manufacturing facilities

LOHIA COMPOSITES

Advanced Composite Products For The Automotive Industry

LOHIA GLOBAL SOLUTIONS

Components & accessories for raffia machineries

INJECTOPLAST

Engineering plastic components and assemblies for automobiles

Lohia Packaging Solutions

Providing woven plastics packaging solutions to raffia industry

LOHIA FAMILY

Industrial History

Today
1930
1972
1981
1982
1983
1984
1988
2000-Onwards

Today

Excellence to Leadership

$162 M
Turnover

80%
Indian Market Share

90+
Countries

AS ON YEAR 2021

LOHIA FAMILY

Industrial History

Today
1930
1972
1981
1982
1983
1984
1988
2000-Onwards

1930

Ventured in manufacturing Edible Oil from ground nuts & mustard seeds with the best available German machines in the world

Lohia family has a trading history going back 200 years of trading in agricultural products which continued until late 1970s.

In 1964, started manufacturing water pumps for air coolers.

LOHIA FAMILY

Industrial History

Today
1930
1972
1981
1982
1983
1984
1988
2000-Onwards

1972

Started manufacturing Synthetic Fiber Processing machinery, first time in India

Promoted LML for expansion in collaboration with world leaders like ARCT.

#ARCT: Atelliers Roannais de Constructions Textiles

LOHIA FAMILY

Industrial History

Today
1930
1972
1981
1982
1983
1984
1988
2000-Onwards

1981

Lohia Starlinger Limited Incorporated

Lohia Starlinger Limited was incorporated as a joint venture between Lohia family and Starlinger & Co. (Austria) for producing machinery for raffia industry.

LOHIA FAMILY

Industrial History

Today
1930
1960
1970
1981
1982
1983
1984
1988
2000-Onwards

1982

Lohia Machines Limited (LML) collaborated with Piaggio, Italy for making “Vespa Scooters” in India.

LOHIA FAMILY

Industrial History

Today
1930
1960
1970
1981
1982
1983
1984
1988
2000-Onwards

1983-84

World's first integrated solutions provider from Extrusion to Conversion to Recycling

Windmöller & Hölscher, Germany, a new technical partner introduced in addition to Starlinger & Co. GmbH, Austria for completing the range.

'Threads India Limited' was formed in technical collaboration with COUSIN Freres S.A. of France for manufacture of Synthetic Industrial Sewing Thread.

LOHIA FAMILY

Industrial History

Today
1930
1960
1970
1981
1982
1983
1984
1988
2000-Onwards

1988

In-house R&D facility recognized & certified by Government of India

'Injectoplast' was established to manufacture auto-components. The products are presently certified with IATF 16949:2016, maintaining quality below 10 ppm.

LOHIA FAMILY

Industrial History

Today
1930
1960
1970
1981
1982
1983
1984
1988
2000-Onwards

2000 Onwards

End to End

Lohia continues to build and improve its portfolio of machines, for all the necessary processes.

2012

Started 'TTRC', to support the raffia industry by providing skilled & trained manpower.

2013

Lohia Starlinger Limited changed its name to Lohia Corp Limited, consequent to exit of Starlinger & Co. as a shareholder.

2019

Acquired 125-year-old company 'LEESONA Corp'. in North Carolina, America, an expert in winding technology; manufacturing Winders, Re-Winders Take-Ups and Winders for flanged spool and parallel winding.

Acquired 'Light & Strong' of Israel, a manufacturer of carbon composite parts & components for aircraft and aerospace industries.

LOHIA FAMILY

Industrial History

Today
1930
1960
1970
1981
1982
1983
1984
1988
2000-Onwards

2000 Onwards

End to End

Lohia continues to build and improve its portfolio of machines, for all the necessary processes.

2020

Lohia Packaging Solutions (LPS) was setup as a “live experience center” for prospective customers to learn and interact with the latest technology for Raffia production.

Lohia Global Solutions (LGS) was established to offer one-stop solution for all spare parts needs and accessories for machineries operating in Raffia Industry.

Lohia Aerospace Systems (LAS) was set-up to manufacture composite parts & components in India with the technology acquired from Israeli ‘Light & Strong’.

Lohia at a Glance

Our Vision

To be the World No.1 in woven plastics machinery and allied businesses through innovative solutions.

Lohia Corp Limited works towards continuous improvement in quality of engagement with all its stakeholders, through continuous innovation, timely response, and compliance.

Turnover
USD 162 Million

Strength
1600+ Employees

Manufacturing Facility
175,000 sqm campus

Patents
50+

AS ON YEAR 2021

Lohia in Raffia Industry

Lohia Machines process more than 3Mn Tons of Raffia annually

Sales Growth
200%
Over 10 years

Installation
1,650
Tape Extrusion Lines

69,400
Circular Weaving Looms

LEADING THE PACK IN ONE OF THE MOST DYNAMIC ECONOMIES OF THE WORLD

Indian Market Share
80%+

Extrusion Capacity Sold
5.76 MMT

INDIA	EXPORT
3.35 MMT	2.41 MMT

AS ON YEAR 2021

Satisfied Customers

Global Presence

1. Algeria
2. Argentina
3. Azerbaijan
4. Bangladesh
5. Belarus
6. Bhutan
7. Bolivia
8. Brazil
9. Bulgaria
10. Burkina Faso
11. Cameroon
12. Canada
13. Chile
14. China
15. Colombia
16. Dominican Republic
17. Ecuador
18. Egypt
19. El Salvador
20. Estonia
21. Ethiopia
22. Germany
23. Georgia
24. Ghana
25. Greece
26. Guatemala
27. Guinea
28. Guyana
29. Honduras
30. India
31. Indonesia
32. Iraq
33. Ivory Coast
34. Japan
35. Jordan
36. Kazakhstan
37. Kenya
38. Kuwait
39. Kyrgystan
40. Liberia
41. Kyrgyzstan
42. Liberia
43. Lithunia
44. Madagascar
45. Malawi
46. Malaysia
47. Mauritania
49. Mauritius
50. Mexico
50. Morocco
51. Mozambique
52. Myanmar
53. Nepal
54. Nicaragua
55. Nigeria
56. Oman
57. Pakistan
58. Paraguay
59. Peru
60. Philippines
61. Poland
62. Portugal
63. Qatar
64. Romania
65. Russia
66. Saudi Arabia
67. Senegal
68. Serbia and Montenegro
69. South Africa
70. Sri Lanka
71. Swaziland
72. Syria
73. Tanzania
74. Thailand
75. Togo
76. Tunisia
77. Turkey
78. Turkmenistan
79. UAE
80. Uganda
81. Ukraine
82. Ukraine
83. USA
84. Uzbekistan
85. Venezuela
86. Vietnam
87. Zambia
88. Zimbabwe

Sales Network

Overseas Sales Offices

1. USA
2. Brazil
3. UAE
4. Russia
5. Thailand

National Sales Offices

1. Ahmedabad
2. Bengaluru
3. Delhi
4. Kanpur (Head Office)
5. Kolkata

International Sales Agents

1. Argentina
2. Bangladesh
3. Colombia
4. Ecuador
5. Guatemala
6. Indonesia
7. Mexico
8. Myanmar
9. Pakistan
10. Peru
11. Poland
12. Serbia
13. Saudi Arabia
14. Uzbekistan
15. Thailand
16. Turkey
17. Ukraine
18. Venezuela
19. Vietnam

Certifications & Accreditations

- Confederation of Indian Industry
- All India Flat Tape Manufacturers Association
- Indian Technical Textile Association
- All India Plastics Manufacturers' Association
- Flexible Intermediate Bulk Container Association
- Gujarat State Plastic Manufacturers Association
- Engineering Export Promotion Council of India
- Plastics Machinery Manufacturers Association of India
- Federation of Indian Chambers of Commerce & Industry

International OEM Suppliers

Murex Technik AG
OEM Part : Screw

Retech Aktiengesellschaft
OEM Part : Godet & Godet Cell

Bernex Bimetall AG
OEM Part : Barrel

Engin Plast S.R.L
OEM Part : Hopper Loader

Cloeren Incorporated
OEM Part : Die

Siemens
OEM Part : Motor

Burckhardt of Switzerland AG
OEM Part : Fibrillating Roller

Maag Pump Systems AG
OEM Part : Melt Pump

ABB
OEM Part : Electric Motor

Motan-Colortronic GmbH
OEM Part : Dosing Unit

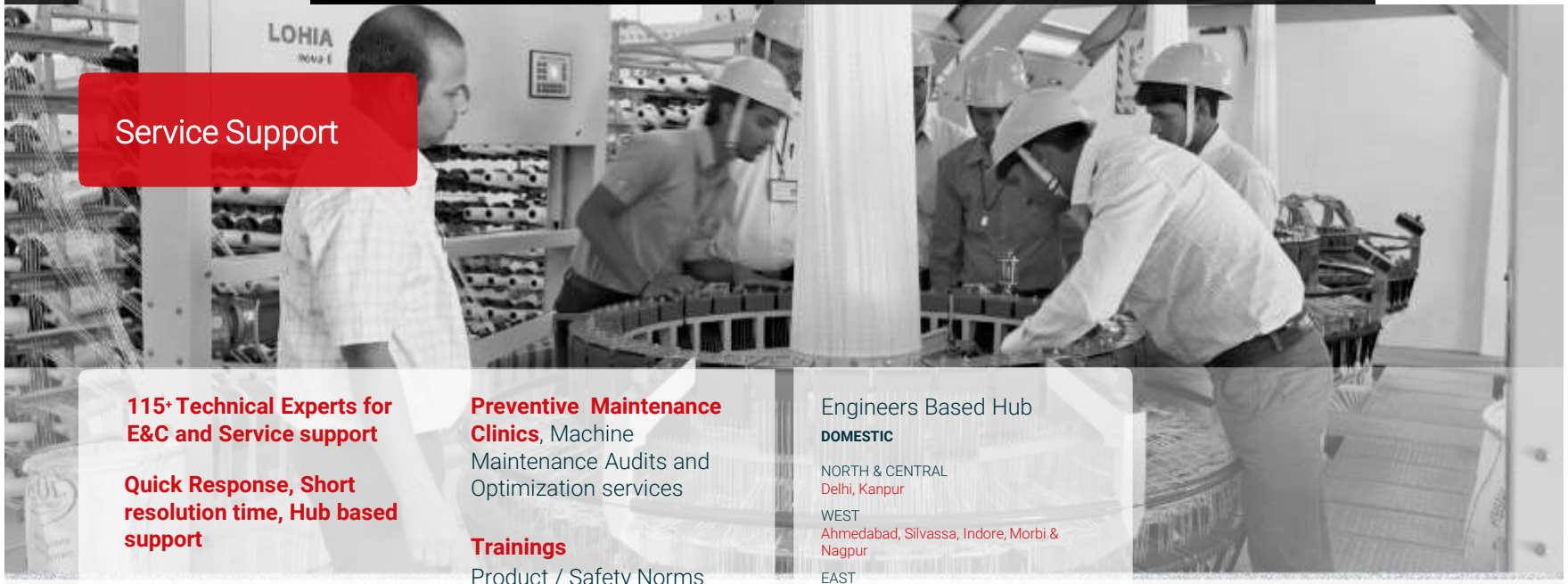
Maguire Products Asia Pvt Ltd
OEM Part : Dosing Unit

B&R
OEM Part : Automation parts, HMI + I/O Modules

Nordson Extrusion Dies
OEM Part : Die

Schneider
OEM Part : Motor

Nordson BKG GmbH
OEM Part : Screen Changer



Service Support

115+ Technical Experts for E&C and Service support

Quick Response, Short resolution time, Hub based support

Onsite / Remote Assistance & Diagnostics

Customized service agreements

Preventive Maintenance Clinics, Machine Maintenance Audits and Optimization services

Trainings Product / Safety Norms /Best Practices

Engineers Based Hub

DOMESTIC

NORTH & CENTRAL
Delhi, Kanpur

WEST
Ahmedabad, Silvassa, Indore, Morbi & Nagpur

EAST
Kolkata

SOUTH
Bengaluru & Hyderabad

OVERSEAS
Brazil, Mexico, Turkey, UAE, Egypt, East Africa, West Africa, Bangladesh, Thailand, Vietnam & Indonesia

Next Year
Russia, South Africa & Kazakhstan

Technical Training & Research Centre

2012

Started TTRC, an initiative to support the raffia industry by providing skilled & trained manpower

TTRC
Technical Training & Research Centre

Structured Training for Raffia Industry Work Force

Part of prestigious India International Skill Centre (IISC) Network

MoU with CIPET and Govt. Polytechnic colleges to facilitate training

Qualification Packs (QP) which is now approved as National Occupational Standard (NOS)

FIRST OF ITS KIND INSTITUTION

CATALYST IN RAFFIA INDUSTRY GROWTH

R & D

NABL accredited laboratory for testing and quality control services as per BIS standards

Applied research projects for development with raw material manufacturing companies

TRAININGS

Customized training modules for Director /Executive /Senior Working Personnel

Onsite training modules for domestic and export markets

Technical training provided by Executives & Engineers from Plastics Raw Material & Masterbatch Companies

TTRC
Technical Training & Research Centre

Structured Training for Raffia Industry Workforce

Successfully Trained

250
ENGINEERS & SUPERVISORS

2500
OPERATORS

INTERNATIONAL PLACEMENTS

Qatar, UAE, Jordan, Republic of Guinea, Egypt, Mauritania, Morocco, Sri Lanka, Vietnam

MTTC
Manufacturing Technology Training Centre

MTTC's aim is to develop trained personnel for the internal requirements of LCL production facilities

Faculty from Nettur Technical Training Foundation (NTTF) established in 1959 is contributing towards technical skill development for the last 60 years.

Extensive courses on Assembly Fitter, Precision Machinist, Electrical Assembly Fitter, Sheet Metal Fabrication.

On the job training in state-of-the-art infrastructure & workshop.

Training methodology based on Toyota Model (60% practical & 40% theory).

Residential facility for trainees within the MTTC Campus.

LOHIA
GLOBAL SOLUTIONS

Lohia Global Solution, a division of LCL, offers one-stop solution for all spare parts needs and accessories for machineries operating in the Raffia Industry.

LGS provides aftermarket solutions and supplies genuine parts through customer centric approach, operational efficiency & advanced value propositions for the customers.

High Quality Components

- Improve reliability of operation
- Reduce breakdowns, increase productivity
- Reduce cost per unit of production

WAREHOUSES

DOMESTIC

NORTH & CENTRAL
Kanpur

WEST
Ahmedabad, Morbi

EAST
Kolkata

SOUTH
Bengaluru

OVERSEAS
Dubai

Next Year
Panama

Engineering Woven Plastics

PRODUCT PORTFOLIO

EXTRUSION | WINDING | WEAVING | COATING | PRINTING | CONVERSION | PP YARN SPINNING | RECYCLING

Machines for Raffia Industry

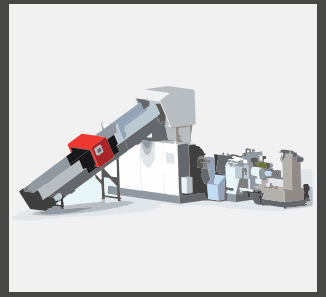
- Tape Extrusion Line
- Tape Winders
- Circular Looms
- Coating Line
- Printing Line
- Bag Conversion System
- Spin Draw Wind Line
- Recycling Machine
- Twister Machine
- Monofilament Extrusion Line









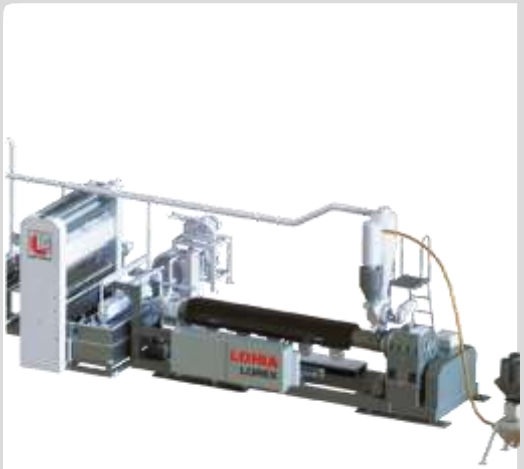



Tape Extrusion Line

MELT CAPACITY
190 - 900 kg/hr

WORKING WIDTH
600 - 2000 mm

LINE SPEED MECHANICAL
Upto 600 mpm



LOREX

duotec

CoEx

Tape Extrusion Line

LOREX

	E60B	E60U	E90U	E90B	E90H	E105U	E105B
Screw Diameter (mm)	60	60	90	90	90	105	105
Melt Capacity - PP (kg/hr) (max.)	190	150	275	350	-	400	450
Melt Capacity - HDPE (kg/hr) (max.)	-	135	260	-	300	350	-
	E105H	**E120U**	**E120B**	**E120H**	**E135B**	**E150B**	
Screw Diameter (mm)	105	120	120	120	135	150	
Melt Capacity - PP (kg/hr) (max.)	-	540	600	-	750	900	
Melt Capacity - HDPE (kg/hr) (max.)	400	460	-	500	-	-	
Working Width (mm) (max.)		600 / 1000 / 1400 / 1600 / 2000					
Line Speed Mechanical (max.)		Standard models upto 400 m/min, High-Speed models upto 500 m/min					

Tape Extrusion Line

Auto die

Denier variation control

- If denier variation is 10% without Autodie, reduced to 5 or 6% with Autodie. Approx. 50% reduction in variation.
- Helps in reduced width variation in looms
- Improvement in quality of weaving in looms. Reduction of tape twisting in fabric. Appearance of bags - uniform and attractive.
- Their end customers are very happy with the performance of the bags – no bursting complaints

May help in improving lower breaking load (Denier x Tenacity) as lower denier value will increase and higher denier value shall decrease due to Autodie

May save polymer - Customers have not measured.

- 2 to 3% in FIBC
- 0.5 to 1% in cement bags

(where end customer has given a target of min bag weight to be maintained)

In case contract is based on

- Weight of Bags – cost advantage is bit less (Direct saving will be less but indirect saving will be more)
- Performance of Bags – cost advantage is high (saving will be both - direct and indirect)

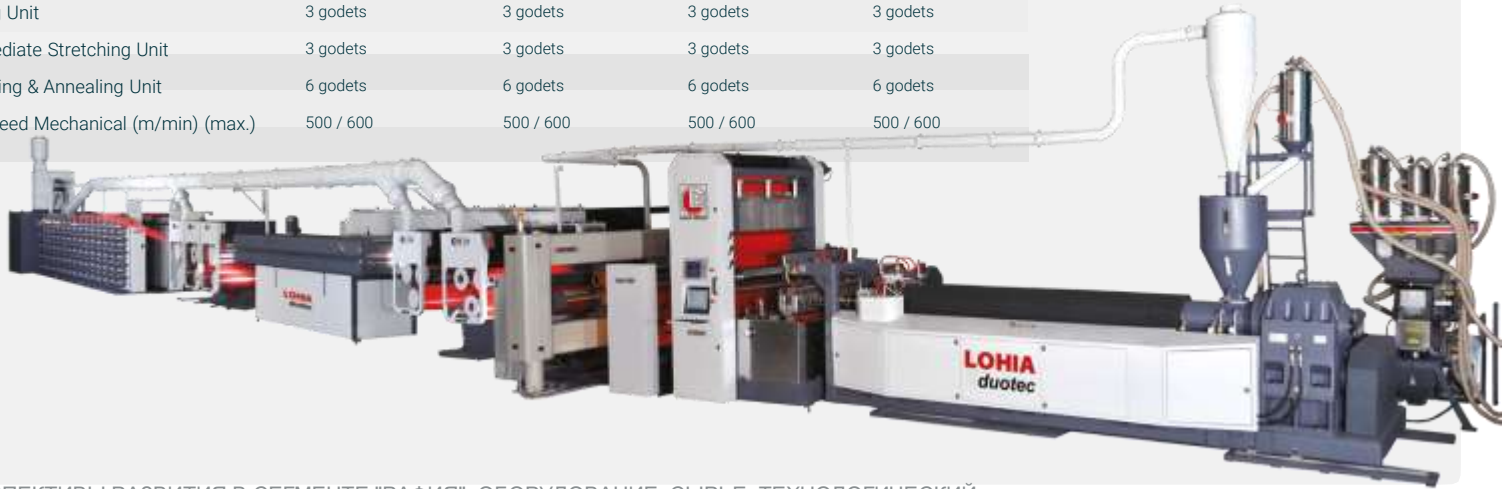
Dependency on skilled tapeline operator is eliminated

Tape Extrusion Line

duotec

First in the World

	E105B	E120B	E135B	E150B
Screw Diameter (mm)	105	120	135	150
Melt Capacity - PP (kg/hr) (max.)	450	600	750	900
Working Width (mm) (max.)	1400	1400	1600	1400 / 1600 / 2000
Holding Unit	3 godets	3 godets	3 godets	3 godets
Intermediate Stretching Unit	3 godets	3 godets	3 godets	3 godets
Stretching & Annealing Unit	6 godets	6 godets	6 godets	6 godets
Line Speed Mechanical (m/min) (max.)	500 / 600	500 / 600	500 / 600	500 / 600



Tape Extrusion Line

duotec

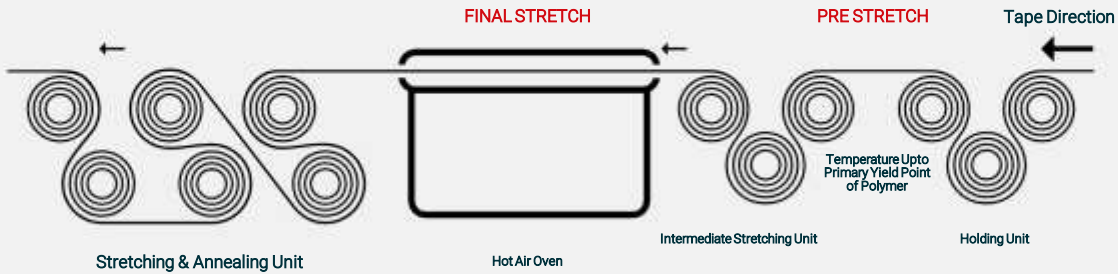
First in the World

Dual Stage Stretching

Better Control on the Process

Process Stability | Tenacity | Elongation

Most innovative technology in Raffia Industry after blown film technology migrated to flat film production



BENEFIT OF DUOTEC IN DIFFERENT PP SEGMENTS

Cement-Pillow type

Tape specs:
width 2,5 (mm), denier 850
GPD>5.0, elongation >25%
Recipe:
PP 90%, Ca M. 10%

Max. possible in Lorex:
450mpm max.
Achievable in Duotec:
500mpm max.

Cement-BB

Tape specs:
width 3 (mm), denier 850
GPD>5.0, elongation >25%
shrinkage <7%
Recipe:
PP 90%, Ca M. 10%

Max. possible in Lorex:
450mpm max
(2N+4H+2C S&A unit,
residual shrinkage 9%)
Achievable in Duotec:
500mpm max.
(2N+4H+2C S&A unit,
residual shrinkage 9%)

FIBC

Tape specs:
width 2.2/4.0, denier
1700/1700 GPD>6.0,
elongation >20%
Recipe: PP 93%, Ca M. 5%
UV 2%

Max. possible in Lorex:
5.8 GPD max.
16-18% Elongation
Achievable in Duotec:
~6.0 GPD
>22% Elongation

Low shrinkage/Carpet Backing

Tape specs:
width 1.1/2.4, denier
400/700 GPD>5.0,
elongation >15%
shrinkage <2%
Recipe: PP 95%, Ca M. 4%
Colour 1%

Max. possible in Lorex:
Shrinkage level
at 300 mpm.
(S&A- 1N+7H+1N+3C)
Achievable in Duotec:
of 1.2 to 1.5 in Duotec,
less shrinkage is possible in Duotec at higher speed upto 350 mpm.
(S&A- 1N+7H+1N+3C)

BENEFIT OF DUOTEC IN DIFFERENT PP SEGMENTS

Normal Bag

Tape specs:
width 2,5 (mm), denier 800
GPD>5.0, elongation >15%
Recipe:
Ca M. 20%

Achievable in Duotec:
3% more Ca can be added to get same properties

Leno

Tape specs:
width 2/2,5 (mm),
denier 550/650
GPD>5.0, elongation >15%
Recipe:
Ca M. 0%

Achievable in Duotec:
No advantage due to no addition of Ca filler & line speed restriction

Sugar

Tape specs:
width 2,5 (mm),
denier 1000,
elongation >20%
Recipe:
Ca M. 20 to 50%

Achievable in Duotec:
No advantage on high filler > 35%

Wrapping Fabric (High Filler & Low Denier)

Tape specs:
width 2,5 (mm),
denier 500,
Recipe:
Ca M. 50%

Achievable in Duotec:
No advantage on high filler > 35%

Tape Extrusion Line

CoEx

Produce composite multilayer laminar structured slit film tapes

	CoEx 1400HS	CoEx 1600HS
Maximum Melt Capacity - Primary Extruder	450 kg/hr	450 kg/hr
Maximum Melt Capacity - Secondary Extruder	150 kg/hr	150 kg/hr
Working Width	1400 mm*	1600 mm*

* Other options on request.

What is Co-Extrusion ?

Process of combining two or more layer of polymeric material in Die to form Composite laminar structure

Each layer of film retains its properties and imparts Desired property in formed cost effective laminar Multilayer structure. Yield properties distinct from mono-layer film

Opens new frontiers in material engineering for addressing new manufacturing needs

Co-Extrusion in Raffia Tape production

B-A-B

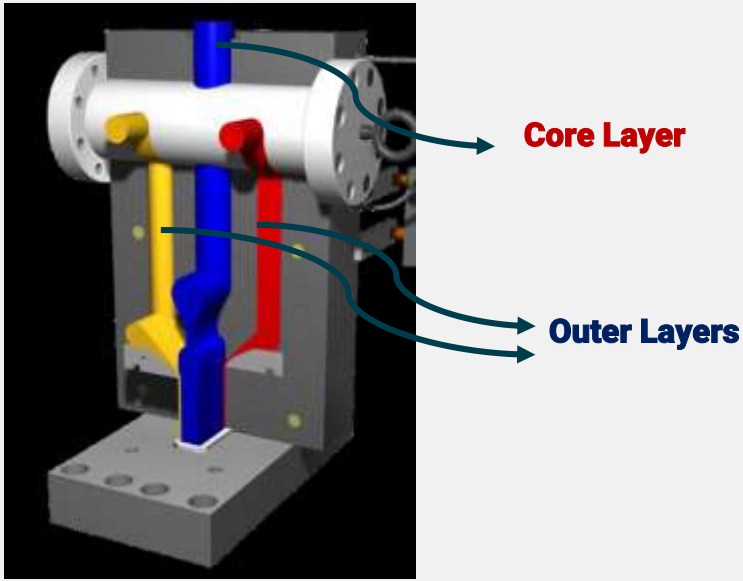
Raffia Co-extruded tape has 3 layer structure. Usually termed as B-A-B

Outer layer B are significantly thinner than the Core layer A Typical layer ratio ranges from 10 – 80 – 10 To 15 – 70 - 15

Outer Layer “B” is from smaller extruder, 150 kg/h and Core layer “A” is from bigger extruder, 450 kg/h

Inner core layer is protected from any contact during subsequent process by the outer layers which becomes critical/performing layer for surface properties

Inside View of Feed block/layer distribution



Tape Extrusion Line

CoEx

Extruder position photograph

Tape Winders

Designed to wind a wide range of tape for both circular and flat looms

DENIER RANGE
400-100,000

TRAVERSE SIZE
200 mm (circular loom)
200/250/300mm (flat looms)
500 mm (heavy duty winder)

WINDING SPEED
Upto 600 mpm

Precision Winder

Step Precision Winder

autoroto Series

Heavy Duty Winder

Tape Winders

A Good Bobbin is Wound to Unwind Well

Low variation in unwinding tension

STEP-PRECISION WINDING

- Minimal variation in fabric width
- Reduced tape breakages

Bigger bobbins

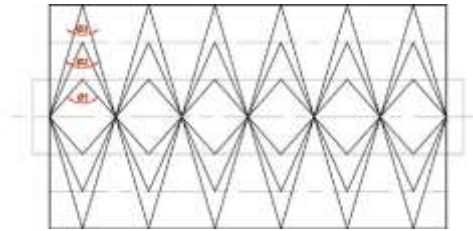
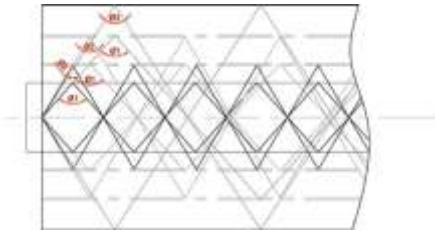
- Improved Efficiency
- Supports high speed weaving

Same tape length on all bobbins

- More predictable planning
- Reduced waste

Tape Winders

Types of Tape Winding

PRECISION WINDING		***STEP PRECISION WINDING***
		
Constant	Crossing Ratio	Decreasing in Steps
Decreasing As bobbin builds up	Crossing Angle	Almost Constant
High	Unwinding Tension Variation (Start to finish)	Low

Tape Winder

Precision Winder

Precision Take-Up Cross-Winders

	LTW 200CM LFW 200CM	LTW 200FM LFW 200FM	LTW 250FM LFW 250FM	LTW 300FM LFW 300FM	LTW 300FE v3 LFW 300FE v3
Winding Ratio Setting	Mechanical	Mechanical	Mechanical	Mechanical	Electronic
Tape Width Range	1.8 - 6.0 mm#*	1.8 - 6.0 mm#*	1.8 - 6.0 mm#*	1.8 - 6.0 mm#*	1 end 1.2-6.0 mm*# 2 ends 0.9-2.0 mm*#
Denier Range	400 - 3000#	400 - 3000#	400 - 3000#	400 - 3000#	500-3500#
Length of Traverse	200 mm	200 mm	250 mm	300 mm	300 mm
Bobbin Core - Inner Diameter	35 mm**	90 mm**	90 mm**	90 mm**	90/82.5 mm**
Bobbin Core - Length	218 mm**	230 mm**	280 mm**	330 mm**	330 mm**
Winding Speed Mechanical	160 - 450 m/min	160 - 425 m/min	160 - 425 m/min	160 - 425 m/min	500 m/min
Bobbin Diameter (max.)	160 mm	240 mm	280 mm	290 mm	300 mm
Frame Configuration	6 High, 4 Across	4 High, 3 Across	4 High, 3 Across	4 High, 3 Across	5 High, 3 Across

Extreme values cannot be combined.
* Traverse guides may need to be changed depending on the tape width.
** Other options on request.

Tape Winder

Step Precision Winder

Step Precision Take-Up Cross-Winders

	LTW 200CE L FW 200CE	LTW 200FE L FW 200FE	LTW 250FE L FW 250FE	LTW 300FE L FW 300FE	LTW 250FE v3 LFW 250FE v3
Winding Ratio Setting	Electronic	Electronic	Electronic	Electronic	Electronic
Tape Width Range	1.8 - 6.0 mm#*	1.8 - 6.0 mm#*	1.8 - 6.0 mm#*	1.8 - 6.0 mm#*	1 end 1.2-6.0 mm*# 2 ends 0.9-2.0 mm*#
Denier Range	400 - 3000#	400 - 3000#	400 - 3000#	400 - 3000#	500-3500#
Length of Traverse	200 mm	200 mm	250 mm	300 mm	250 mm
Bobbin Core - Inner Diameter	35 mm**	90 mm**	90 mm**	90 mm**	90/82.5 mm**
Bobbin Core - Length	218 mm**	230 mm**	280 mm**	330 mm**	280 mm**
Winding Speed Mechanical	160 - 500 m/min	160 - 500 m/min	160 - 500 m/min	160 - 500 m/min	500 m/min
Bobbin Diameter (max.)	160 mm	240 mm	280 mm	290 mm	280 mm
Frame Configuration	6 High, 4 Across	4 High, 3 Across	4 High, 3 Across	4 High, 3 Across	5 High, 3 Across

Extreme values cannot be combined.
* Traverse guides may need to be changed depending on the tape width.
** Other options on request.

Tape Winder

autoroto

Efficient and cost-effective tape winding with automatic changeover of bobbins

First in the World

	autoroto 200CF *autoroto 200CT*	*autoroto 250FF/300FF* *autoroto 250FT/300FT*	*autoroto 200CF v4* *autoroto 200CT v4*	*autoroto 250/300 FF v3* *autoroto 250/300 FT v3*
Bobbin Changeover	At Preset Length	At Preset Length	At preset length	At preset length
Tape Width Range	1.8 - 6.0 mm#*	1.8 - 6.0 mm#*	1 end 1.8 - 6.0 mm*#** 2 ends 0.9 - 2.0 mm*#**	1 end 1.2 - 6.0 mm*# 2 ends 0.9 - 2.0 mm*#
Denier Range	500 - 2000#	500 - 2000#	500 - 3000#**	500 - 3500#
Length of Traverse	200 mm	250 / 300 mm	200 mm	250 / 300 mm
Bobbin Core - Inner Diameter	35 mm**	90 / 82.5 mm**	35 mm*#	90 mm*#
Bobbin Core - Outer Diameter	40 mm**	96 / 88.5 mm**	40 mm**	98 mm**
Bobbin Core - Length	218 mm**	280 / 330 mm**	218 mm**	280 / 330 mm**
Winding Speed Mechanical (Max.)	200 - 600 m/min	200 - 600 m/min	200 - 600 m/min	600 m/min
Max. Bobbin Diameter	200 mm	300 mm	200 mm	320 mm
Frame Configuration	5 High, 3 Across	3 High, 3 Across	5 High, 3 Across	3 High, 3 Across

Extreme values cannot be combined.
* Traverse guides may need to be changed depending on the tape width.
** Other options on request.

Advantage of autoroto

Automatic Changeover Lower labour cost

- Less effort in bobbin change
- Lower skill set
- Lesser no. of workers per line

Lesser compressed air consumption

- Suction guns are not needed for transferring tape from full bobbins being doffed to new tube

Negligible waste during changeover

- No sucking away of tape during doffing

Better safety

- Operator is not under pressure to work against time (as in conventional system)

Individual Monitoring of Package

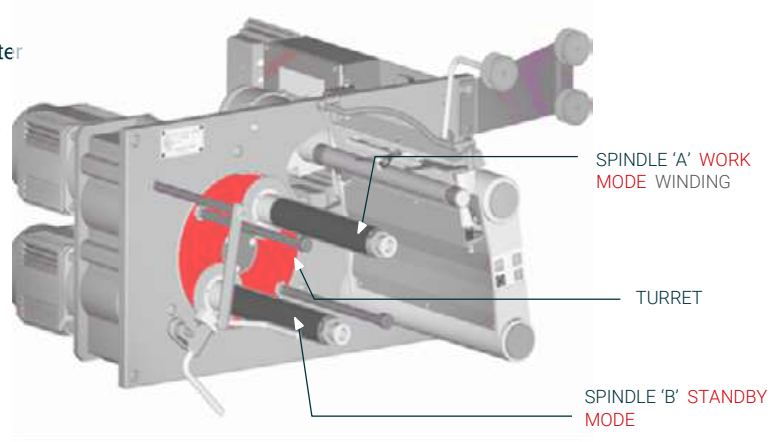
Control on length, winding time, bobbin diameter

Equal length bobbins

- Negligible waste during block weft change
- Reduced fabric defects
- Increased Loom efficiency – Results in saving in capital investment
- Block creeling of warp is a feasible option
- "Negligible waste" in warp/weft bobbin bottoms

Different lengths/dia. for warp and weft on different sections of winder at same time

- Lower wastage



Bigger Package Diameter

Longer lengths of tape in warp creel

- Lesser fabric defects

Increases time between warp changes

More looms per operator

Lower manpower cost

Tape Winder

Heavy Duty Step Precision Winder

Heavy duty winder for tapes and yarns

	LFW 500 JE LTW 500 JE
Tape Type	PP Fibrillated
Denier Range	10,000 - 100,000#
Winding Tension	1,000 - 10,000#cN
Traverse	500 mm
Take Up Spindle	105 mm Tubeless**
Maximum Bobbin Diameter	700 mm#
Winding Speed Mechanical	70 - 300#* m/min
Take-Up Weight (max.)	100 kg

#Extreme values indicated are not achievable simultaneously.
**Other options on request.
*Different winding speeds may require change of spindle pulley.

Centralized Tape/Yarn Tension

One Button Engage/Disengage

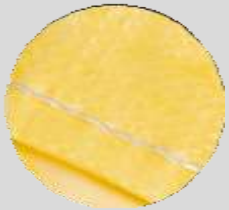
Indication for Pre-set Length

Centralized Bale Roller Pressure

Individual Tape/Yarn Tension

Control Alarm for Tape Breakage

Circular Weaving Looms



WORKING WIDTH
250-2950 mm

WEFT INSERTION
Upto 1100 ppm

FABRIC CONSTRUCTION
Leno, Plain & Combination

nova
(LF & HF version)

LSL
(LF & HF version)

venti

Leno

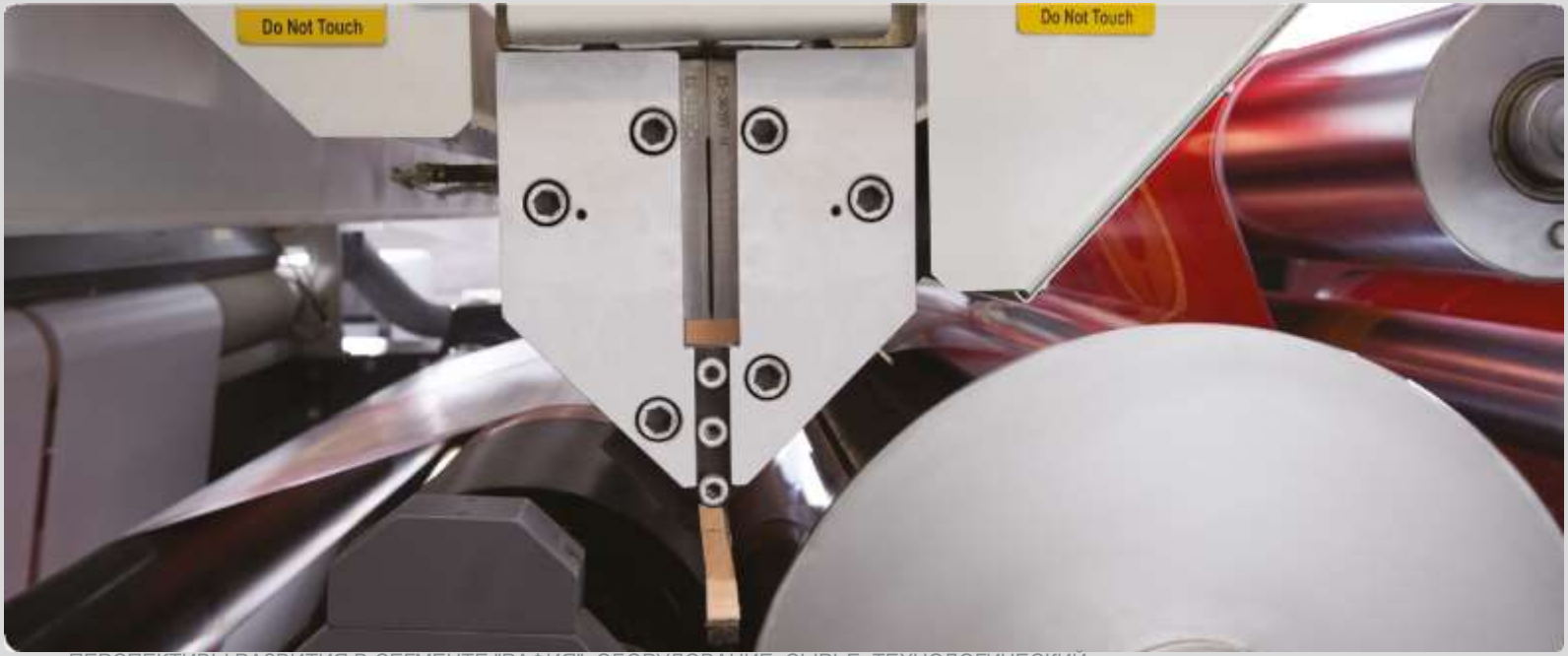
Coating

Extrusion coating or lamination on
flat/tubular PP / HDPE woven fabric

MELT CAPACITY
250 - 750 kg/hr

WORKING WIDTH
660 - 4000 mm

LINE SPEED
MECHANICAL
Upto 200 mpm



Extrusion Coating Line

lamicoat

	lamicoat 1600 Tx	*lamicoat 1600 Ex*	*lamicoat 2500*	*lamicoat 4000*
Screw Diameter	50 mm	50 mm	90 mm	–
Extrusion Melt Capacity – PP/LDPE	330 kg/hr	250 kg/hr	330 kg/hr	750 kg/hr
Line Speed Mechanical (max.)	200 m/min - Coating* 150 m/min - Laminating	150 m/min - Coating 120 m/min - Laminating	120 m/min - Coating	150 m/min - Coating
Die – Slot Width	1800 mm**	1800 mm**	2700 mm**	4100 mm
Die – Working Width	1600 mm**	1600 mm**	2500 mm**	4000 mm
Working Width – Flat Fabric	660 to 1600 mm	660 to 1600 mm	1500 to 2500 mm	2200 to 4000 mm
Working Width – Tubular Fabric	300 to 750 mm	300 to 750 mm	1500 to 2500 mm	–

* With fabric accumulator.
** Other options available on request.

Printing

Designed for high quality 4/6 colour flexographic printing on flat/tubular PP/HDPE woven fabric

PRINTING SPEED (MAX.)
150 m/min (Mechanical)
120 m/min (Operating)

PRINT REPEAT LENGTH
500 to 1300 mm

PRINT WIDTH (MAX.)
800 mm

Small Bag Conversion Lines

FOR PP/HDPE TUBULAR FABRIC
Non Laminated / Laminated / Leno

bcs

bcs-liner

blokomatic

valvomatic

LM-650

Bag Conversion Lines

blokomatic

Block bottom valve bag conversion system without applications of adhesive

	Block Bottom Valve Bag
SIZE RANGES	
Bag Length	45 - 67 cm
Sack Width	35 - 53 cm
Bottom Width	8 - 12 cm
Opened Bottom Width	18 - 26 cm
Bottom Center Distance	35 - 57 cm
TUBE	
Cutting Length	53 - 80 cm
Width of Tubular Fabric	35 - 53 cm
VALVE	
Cutting Length	8 - 20 cm
Width of Flat Fabric	17 - 26 cm
BOTTOM PATCH	
Cutting Length	23 - 45 cm
Width of Flat Fabric	7.5 – 11.5 cm
CAPACITY	
Production Speed	120 bags/min

PRODUCTION CAPACITY

120 Bags/min

PATENTED

Double Stacker,
Pre-opening & Opening Units

BLOCK BOTTOM VALVE

Bags are Durable
Save material, reduce transit loss

Bag Conversion Lines

slitomatic

woven strip slitting system

	slitomatic
Input Roll Width (max.)	750 mm
Roll Diameter on Unwinding Unit (max.)	1200 mm
Roll Diameter on Rewinding Unit (max.)	1200 mm
Operating Speed (max.)	100 m/min

slitomatic is a high-speed machine designed to slit a roll of flat-coated woven PP fabric into multiple rolls of smaller widths for producing valve and top/bottom patches to be used as an input in block bottom valve bag production.

Bag Conversion Lines

valvomatic 40

Produces both side stitched valve bags from tubular woven fabric automatically

First in the World

	valvomatic 40
Width of Unwinding Fabric Roll	470 - 520 mm
Diameter of Fabric Roll	1300 mm
Internal Diameter of Core	70 - 115 mm**
Replacement of Fabric Roll	Pneumatic System
Cutting Length	850 - 1050 mm
Cutting Length Accuracy	± 1 mm for Unprinted Fabric
Top Folding Width	45 mm (Option - 40 mm)
Bottom Folding Width	25 mm (Option - 22 mm)
Stitching Type	Double Stitch
Range	4 - 9 mm for Top Sitch 4 - 9 mm for Bottom Stitch
Valve Depth	210 - 240 mm
Valve Width	90 - 120 mm
Production Speed	Upto 40 bags / min*
Dimensions (L x W x H)	10.1 x 5.2 x 1.5 m

*Depends on width, quality of fabric used including winding & PP multifilament stitching yarn etc.
**Other options on request.

HIGHER SPEED

Upto 40 Bags/Min

VALVE BAGS

Automated Production

IDEAL FOR

Cement Packaging

Bag Conversion Lines

LM-650

Back seam woven sack maker

	LM-650
Processing Capability	PP/HDPE Laminated Woven Fabric
Input Film Width (Flat Film)	525 - 1560 mm
Input Film Roll Diameter	1200 mm/1000 kg
Draw Length	300 - 1100 mm#
Side Gusset	50 - 75 mm##
Processing Width (Without Gusset)	250 - 650 mm
Processing Width (With Gusset)	250 - 500 mm*
Mechanical Speed (max.)	100** (cys./min.)*
Limiting Line Speed	65 m/min
Dimensions (L x W x H)	10.0 x 10.0 x 3.0 m

Depending on type of bag.
Gusset Size variation expected to be within +/- 3 mm.
* Depend on Gusset Size.
** Depending on type of bag, material, thickness, end folding pattern, stitching pattern and draw-length.

ECO FRIENDLY
Retail Packaging

COMPACT SIZE WITH
High Productivity

AUTOMATED PROCESS FOR
High Operational Efficiency

POWER SAVINGS DUE TO
Integrated Tubing & Bag Making

FIBC
Conversion Lines

fcm

bbcm

bcm

pcm

Spin-Draw-Wind Line

Designed for high & medium tenacity yarns for variety of applications

DENIER RANGE
400 - 5040

MELT CAPACITY
20/40/80 kg/hr

WINDING SPEED
Upto 2500 mpm

baby lofil HT

lofil 40/4 HT

lofil 80/8 HT

lofilDuo HS

Recycling Machine

RECLAMAX

Reprocessing PP/PE Raffia industrial waste

		RECLAMAX
Raffia Grade Polypropylene (PP)	Start-up small lumps, Tapes without Core, Loom Waste, Plain/Printed Woven Fabrics, Coated/ Laminated (BOPP) Woven Fabrics, Bags.	170-230 kg/hr
	MFR (230ºC/2.16kg) (g/10min)	2.2 - 4
Raffia Grade High Density Polyethylene (HDPE)	Start-up **small lumps, Tapes, Loom Waste, Plain/** Printed Woven Fabrics, Coated/Laminated (BOPP) Woven Fabrics, Bags etc.	160-230 kg/hr
	MFR (190ºC/2.16kg) (g/10min)	0.5
LDPE	Start-up small lumps, Films without Core, Strips.	180-250 kg/hr
	MFR (190ºC/2.16kg) (g/10min)	0.5
LLDPE	Start-up **small lumps, Films without Core, Strips.**	160-220 kg/hr
	MFR (190ºC/2.16kg) (g/10min)	0.5
Pre-operation Feed Material Condition	Origin	Post Industrial
	Surface Treatment	Printed/Non-Printed
	Contamination	Clean Or Slightly Contaminated
	Form	Loose
	Moisture	Dry

Note: Output values depend on material and quality.

ONE-STEP TECHNOLOGY

In-line Conveyor-Shredder-Extruder

250 kg/hr recycling capacity

In-line size reduction via heavy-duty shredder system

Venting for processing of printed & humid material

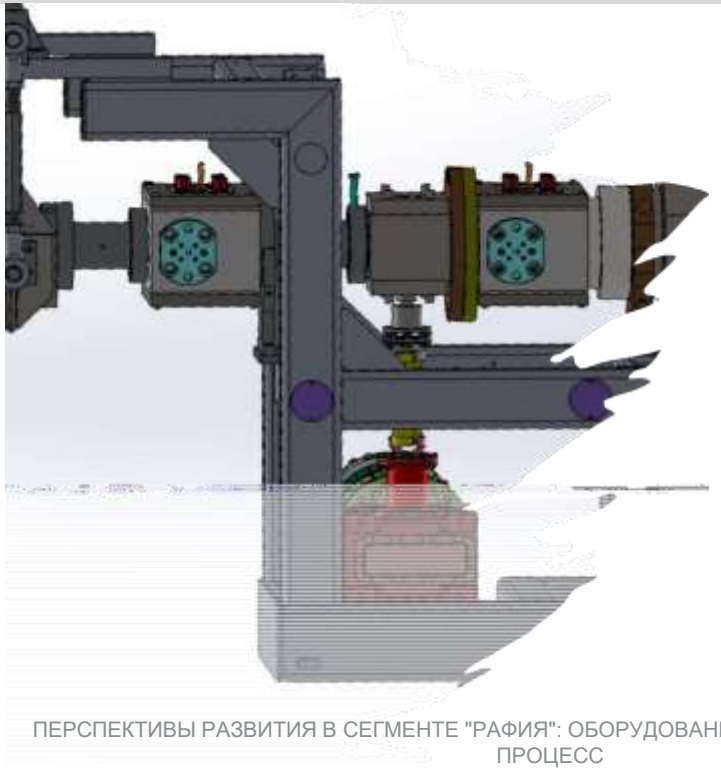
Integrated die face pelletizing system maintains uniform bulk density

High performance automatic filtration system with back-flush ensures continuous production

One point operational control HMI interface ensures ease of operation

Installed HD cameras for live monitoring of the shredder operation

Du-FiLT Technology



- Dual filtration station
  - 1 st after Extruder
  - 2nd before Die
- Many fold increase in filtration area
- Outstanding enhanced filtration capacity
- Varied filtration media option offer filtration level above 10 microns
- Uninterrupted continuous operation and film quality with self-cleaning feature
- Better fine filtration helps in achieving better tensile properties
- Better quality tapes
- Lower wastage
- Most economical operation

Twister Winder

LT 300

two-for-one twister

	LT 300
Denier Range	4000 to 120,000
Speed	4000 rpm
Twist	8000 twists/min
Twist Range	20 to 96 Twists/meter
Twist Direction	S or Z
Spool Dimension	From 6" to 12"
Spool weigh (PP Yarns)	13 kg. of 12" x 12"
Installed Power	Main Motor 7.5 kw
Energy Consumption (max.)	6.0 kw
Machine Weight	1470 kg
Dimensions (Lx W x H)	2440 x 1100 x 1470 mm

	accumulator
AC Motor Power with Inverter	1.5 kw
Mobile Cradle Content (max.)	1620 rpm
Material Distribution at Each Revolution	3380 m
Necessary Take-up Space in Mobile Cradle	1390 m
Take-Up Speed (max.)	350 m/1'
Net Weight	544 kg
Dimensions (Lx W x H)	2640 x 1470 x 1575 mm

LT 300 is suitable for making twisted yarns from synthetic fibers for making twines, tying twines, industrial fibers, baler twines & pre-twisted yarns.

Monofilament Extrusion Lines

monotec

	E75M	E90M	E105M	E120M
Screw Diameter (mm)	75	90	105	120
Melt Capacity - PP (kg/hr) (max.)	260	275	400	500
Melt Capacity - HDPE (kg/hr) (max.)	210	220	300	375
Working Width (mm) (max.)	800	1000	1000	1400
Holding Unit	5 godets			
Hot Air Stretching Oven	Upto 6 meters			
Or Overflow Water Stretching Oven	Up to 4/5 meters			
Stretching Unit	5/7 godets			
Hot Air annealing Oven	Upto 6 meters			
Annealing Unit	3/5 godets			
Line Speed Mechanical (m/min) (max.)	Stndard model upto 250 m/min			

End Applications

Woven Fabric, Flexible Packging and More

Not all Plastic is bad for Environment

ADVANTAGES OF WOVEN RAFFIA FABRIC & ITS APPLICATIONS

- Lower cost of packaging w.r.t. jute & paper
- Stronger yet lighter bags (70gm plastic woven sacks is equivalent to the load bearing capacity of 500gm jute bag)
- Lower transportation and handling
- Can survive in extreme temperature
- Preserves the virtue of the packed food or beverage
- Protects products from moisture, oxygen, dust, light and odours
- Longer useful life

RAFFIA - Woven Plastic Flexible Packaging

The name ‘Raffia’ is derived from the natural fiber in leaves of Raffia Palm found in Africa.

- Used for making mats & baskets etc.
- The structure of woven sacks prepared from PP and HDPE tapes resembles those raffia mats

End Applications

- Agrotex
- Buildtex
- Geotex
- Packtex
- Special Purpose

End Applications

- Agrotex
- Buildtex
- Geotex
- Pactex
- Special Purpose

GROUND COVER
HARVESTING FABRIC
SHADE NETS
HAIL NETS
GREENHOUSE COVERS
GROW BAGS
BALER TWINES
CROP COVERS
MULCH FABRIC
VERMI BEDS

End Applications

- Agrotex
- **Buildtex**
- Geotex
- Pactex
- Special Purpose

SCAFFOLDING FABRIC
ROOF UNDERLAYMENT
TARPAULIN

End Applications

- Agrotex
- Buildtex
- Geotex
- Packtex
- Special Purpose

GEO TEXTILES

POND LINER

End Applications

- Agrotex
- Buildtex
- Geotex
- Packtex
- Special Purpose

LENO

RICE
FLOUR
WHEAT
LENTILS
SALT
SUGAR
BARLEY
MINERALS/CHEMICALS

FERTILISER
CEMENT
VENTILLATED JUMBO BAGS
JUMBO BAGS
WRAPPING FABRIC
FEED POULTRY
FEED CATTLE
FEED PET ANIMALS
COURIER/POST BAGS

TEXTILE CONE BAGS
LINER (CONTAINER) BAGS
COAL BAGS
POLYMER BAGS
SHOPPING BAGS
FLEXI TANKS (LIQUIDS)
LUMBER COVER
SAND BAGS
BALE WRAPPING

End Applications

- Agrotex
- Buildtex
- Geotex
- Pactex
- Special Purpose

DUNNAGE BAGS
CARPET BACKING
JUTE REPLACEMENT YARN
ROPES

Dunnage Bags


Carpet Backing


Jute Replacement Yarn


Ropes

LOHIA GROUP

LohiaCorp

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AS ON YEAR 2021

Текущие специальные продуктовые решения СИБУР для сегмента рафии

- **PP H 043FF**
- **PP H 063FF**

В 2020 ГОДУ СИБУР ВЫВЕЛ НА РЫНОК СПЕЦИАЛЬНЫЕ ПРОДУКТОВЫЕ РЕШЕНИЯ PP H043FF/3 и PP H063FF/3 В СЕГМЕНТЕ РАФИЯ

В ЧЕМ ИХ ОСОБЕННОСТИ:

Предназначены для **производства плоской пленочной нити,** используемой для изготовления мягкой тканой упаковки, изделий технического, сельскохозяйственного назначения

Основная задача марок – **увеличение производительности** линии

Усиленная рецептура стабилизации, обеспечивающая **пониженный капельный унос**

ДЛЯ КАКИХ ИЗДЕЛИЙ ПОДХОДЯТ НОВЫЕ МАРКИ:

PP H063 FF Легкая нить (55 – 135 текс)	PP H043 FF Тяжелая нить (135 –255 текс)
• Мешки • Облегченное тканое полотно для индустриальных применений (геотекстиль, мембраны, пр.)	• Биг-бэги • Шпагат • Утяжеленное тканое полотно для индустриальных применений (геотекстиль, мембраны, пр.)

КЛЮЧЕВЫЕ ОТЛИЧИЯ PP H043FF/3 и PP H063FF/3 ОТ БАЗОВОЙ МАРКИ PP H030 GP/3

СВОЙСТВА	PP H030 GP	PP H043 FF	PP H063 FF
ПТР, г/10 мин	3,0	**4,2**	**6,0**
Разброс ПТР, %	6	**5**	
XS, %	Не нормируется	**3,5 - 4,5**	
Пакет добавок	Базовый	Специальный: Обеспечивающая **пониженный капельный унос**	

ТЕХНИЧЕСКИЕ ПРЕИМУЩЕСТВА

1 Высокий ПТР

Обеспечивает повышение производительности **до 20%***

Облегчает процесс переработки, снижая нагрузку на электродвигатель экструдера

2 Узкий диапазон контролируемых свойств

Гарантированная стабильность свойств марок от партии к партии

Улучшенная технологичность при переработке марок при длительном использовании

3 Усиленная рецептура стабилизации

Пониженный капельный унос жидкости пленочным полотном

Отсутствие обрывности нитей при переработке

Перспективные специальные продуктовые решения для сегмента рафии

НОВЫЕ СПЕЦИАЛЬНЫЕ ПРОДУКТОВЫЕ РЕШЕНИЯ В СЕГМЕНТЕ ПОЛИПРОПИЛЕНОВОЙ РАФИИ

В ЧЕМ ИХ ОСОБЕННОСТЬ:

Предназначены для **производства плоской пленочной нити,** используемой для изготовления мягкой тканой упаковки, изделий технического, сельскохозяйственного назначения

Основная задача новых продуктов – **расширение технологического окна переработки при увеличении производительности и сохранении физико-механических свойств пленочной нити**

Контролируемая реология, усиленная рецептура стабилизации, обеспечивающая **пониженный капельный унос**

ПРИМЕНЕНИЕ НОВЫХ РЕШЕНИЙ:

Легкая нить и Тяжелая нить (55 –255 текс)

- Мешки
- Облегченное тканое полотно для индустриальных применений (геотекстиль, мембраны, пр.) Биг-бэги
- Шпагат
- Утяжеленное тканое полотно для индустриальных применений (геотекстиль, мембраны, пр.)

Изменения в нормативных документах на упаковку из рафийных нитей

Новый межгосударственный стандарт (проект) через МТК 223 «Упаковка»

ЕВРАЗИЙСКИЙ СОВЕТ ПО СТАНДАРТИЗАЦИИ, МЕТРОЛОГИИ И СЕРТИФИКАЦИИ (ЕАСС)

EURO – ASIAN COUNCIL FOR STANDARDIZATION, METROLOGY AND CERTIFICATION (EASC)

МЕЖГОСУДАРСТВЕННЫЙ СТАНДАРТ

ГОСТ
–
202

Мешок полимерный коробчатый.
Общие технические условия.

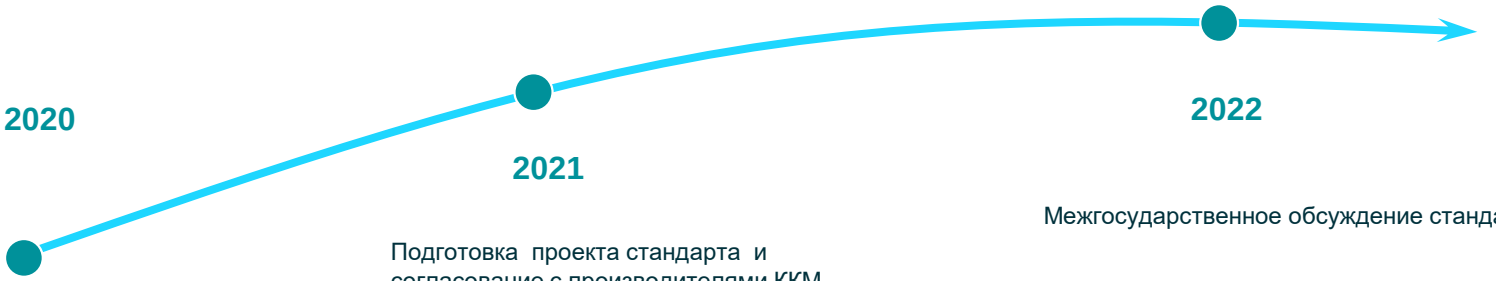
Издание официальное

Минск
Евразийский совет по стандартизации, метрологии и сертификации
202

- Мешки для хранения пищевой и технической продукции массой до 50 кг.
- Три типа коробчатых мешков.
- Методика тестирования на прочность - сопротивление ударам при свободном падении.
- Методика тестирования на стабильность к УФ излучению.
- Методика оценка качества печати (скотч –тест).

Новый межгосударственный стандарт (проект) через МТК 223 «Упаковка»

Хронология



Старт создания стандарта на основе стандарта для коробчатых клапанных мешков для цемента.

Консультации с ТК 223

Консультации с ассоциацией производителей цемента и поставщиками.

Консультации с производителями КК мешков и поставщиков оборудования.
Анализ ГОСТ по альтернативной упаковке

Подготовка проекта стандарта и согласование с производителями ККМ.

Разработка и согласование методик тестирования
- стабильность к УФ воздействию
- оценка качества печати

Подготовка окончательной редакции проекта межгосударственного стандарта.

Сводка отзывов на первую редакцию.

Подготовка к межгосударственному согласованию

Межгосударственное обсуждение стандарта.

Подготовка сводки отзывов ко второму обсуждению

Согласование финальной редакции.

Нормоконтроль.

Принятие стандарта.

Методика тестирования на стабильность к УФ излучению


МЕЖГОСУДАРСТВЕННЫЙ СТАНДАРТ

ГОСТ

202

Мешок полимерный коробчатый. Общие технические условия.

Издание официальное

Минск
Евразийский совет по стандартизации, метрологии и сертификации
202

- Материалы часто подвергаются быстрой фотохимической деструкции под воздействием солнечных лучей. Этого не происходит только в случаях проведения износостойкой стабилизации.

Как оценить устойчивость к воздействию УФ?

ГОСТ 32522-2013 (МЕШКИ ТКАНЫЕ ПОЛИПРОПИЛЕНОВЫЕ) *… Мешки из композиций со светостабилизирующими добавками подвергают испытанию на стойкость к воздействию ультрафиолетовых лучей п о* ***ГОСТ 9.708*** *в соответствии с принятой программой, согласованной с потребителем (заказчиком)..*

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ГОСТ ISO 21898-2013 (КОНТЕЙНЕРЫ МЯГКИЕ (МК) ДЛЯ НЕОПАСНЫХ ГРУЗОВ) - *межгосударственный ГОСТ,* ***но не действует на территории РФ*** *(методика тестирования на стойкость к УФ описана в Приложении А)*

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ГОСТ ISO 23560-2015 (МЕШКИ ТКАНЫЕ ПОЛИПРОПИЛЕНОВЫЕ ДЛЯ УПАКОВКИ СЫПУЧИХ ПИЩЕВЫХ ПРОДУКТОВ), *межгосударственный ГОСТ,* *но* ***не действует на территории РФ*** *, ссылается на ISO* 4892-3:2013 Plastics. Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps (Пластмассы. Методы экспонирования под лабораторными источниками света. Часть 3. Люминесцентные лампы ультрафиолетового излучения).

Методика тестирования на стабильность к УФ излучению

- Материалы часто подвергаются быстрой фотохимической деструкции под воздействием солнечных лучей. Этого не происходит только в случаях проведения износостойкой стабилизации.

Что предлагает новый стандарт?

Принцип тестирования

Образцы для испытания поочередно подвергаются воздействию УФ-лучей и конденсации в повторяющемся цикле.

Применяемое оборудование

Прибор должен соответствовать ASTM G154 при использовании ультрафиолетовой лампы категории B (UVB 313 нм).

Порядок тестирования и мощность излучения:

Образец облучают флуоресцентной ультрафиолетовой лампой UVB 313 нм в течении **400 ч**, используя цикл 8-часового воздействия УФ-излучением при температуре 60°C с последующей 4-часовой конденсацией при температуре 50°C.

Поверхностная плотность излучения должна составлять **0.71** Вт/м2/нм при 313 нм.

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Методика оценка качества печати (скотч –тест) - Приложение Е.

ГОСТ 32522-2013 … *Качество нанесения печати проверяют по ГОСТ 17811 (*МЕШКИ ПОЛИЭТИЛЕНОВЫЕ ДЛЯ ХИМИЧЕСКОЙ ПРОДУКЦИИ) *полиэтиленовой лентой с липким слоем по ГОСТ 20477 или десятикратным протиранием вручную без нажима белой хлопчатобумажной тканью, смоченной в воде, нагретой до 60°С.*
Лента или ткань не должны окрашиваться.

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ЕВРАЗИЙСКИЙ СОВЕТ ПО СТАНДАРТИЗАЦИИ, МЕТРОЛОГИИ И СЕРТИФИКАЦИИ (ЕАСС)

EURO – ASIAN COUNCIL FOR STANDARDIZATION, METROLOGY AND CERTIFICATION (EASC)

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Можно ли предложить более простую методику?

- Детальное описание процесса тестирования
- Оборудование : Клеящая лента - Tesa 4104, 4202 или 3M Scotch 610, 810.
- Критерии оценки качества печати - пятибалльная шкала.