LABORATORY TEST REPORT ON CONVEYOR BELTING

TO THE REQUIREMENTS OF THE

CANADIAN STANDARD ASSOCIATION CSA M422-23

FIRE-PERFORMANCE AND ANTISTATIC REQUIREMENTS FOR CONVEYOR BELTING

FOR:

Forech India Private Limited

S-23, Green Park Extension, New Delhi 110016, INDIA

REPORT #: C042-CSA M422-23-BELT C-2024-04

DATE: August 27, 2024

REPORT PREPARED BY:

EHAB ZALOK, PH.D., P.ENG.

PROFESSOR, CARLETON UNIVERSITY, CANADA

1. **Introduction**

   The samples were prepared, conditioned, and tested according to CSA-M422-23, Type C Belting. The test results were measured against the required criteria of the CSA-M422-23, Type C Belting, and the following results were noted:

Item # 1: ICLAM-FORECH CSA 600

Trade name	ICLAM-FORECH
Belt style	POLYESTER / POLYAMIDE 300 X 2 Ply (2 plies/350 PIW)
Top/carry cover material/compound	C-3194
Bottom/pulley cover material/compound	C-3194
Skim/ Cushion material/compound	C-2194
Fabric/textile gauge/properties	POLYESTER / POLYAMIDE 1.25 mm
Steel cord gauge/properties	NA
Carry cover thickness	12.7 mm (1/2”)
Pulley cover thickness	6.4 mm (1/4”)
Nominal total thickness	Ave 23.8 mm | Max 24.0 mm| Min 23.4 mm
Country of origin/ Production facility / location	INDIA. FIPL/Sonipat Haryana & FIPL/Cheyyar Tamil Nadu

Item # 2: ICLAM-FORECH CSA 1200

Trade name	ICLAM-FORECH
Belt style	POLYESTER / POLYAMIDE 300 X 4 Ply (4 plies / 700 PIW)
Top/carry cover material/compound	C-3194
Bottom/pulley cover material/compound	C-3194
Skim/ Cushion material/compound	C-2194
Fabric/textile gauge/properties	POLYESTER / POLYAMIDE 1.25 mm
Steel cord gauge / properties	NA
Carry cover thickness	6.4 mm (1/4”)
Pulley cover thickness	3.2 mm (1/8”)
Nominal total thickness	Ave 17.7 mm | Max 17.9 mm| Min 17.5 mm
Country of origin/ Production facility / location	INDIA. FIPL/Sonipat Haryana & FIPL/Cheyyar Tamil Nadu

Item # 3: ICLAM-FORECH CSA 2400

Trade name	ICLAM-FORECH
Belt style	POLYESTER/POLYAMIDE 800 X 3 Ply (3 plies / 1350 PIW)
Top/carry cover material/compound	C-3194
Bottom/pulley cover material/compound	C-3194
Skim/ Cushion material/compound	C-2194
Fabric/textile gauge/properties	POLYESTER / POLYAMIDE 3.4 mm
Steel cord gauge and properties	NA
Carry cover thickness	4.8 mm (3.16”)
Pulley cover thickness	1.6 mm (1/16”)
Nominal total thickness	Ave 17.1 mm | Max 17.2 mm| Min 16.7 mm
Country of origin/ Production facility / location	INDIA. FIPL/Sonipat Haryana & FIPL/Cheyyar Tamil Nadu

2. Results:

Criteria	Results (Items 1, 2, and 3)
1. Flame test	PASS
2. Drum Friction Test	PASS
3. Electrical Surface Resistance	PASS

3. Conclusion:

- Items # 1, #2, and #3 were tested and when formulated and constructed in accordance with the provisions of the associated schedule were **DEEMED TO COMPLY** with the relevant provisions of the Canadian Standards Association Standard Fire-Performance and Antistatic Requirements for Conveyor Belting CSA-M422-23 (Type C Belting).
- This is a range approval for all belts between 600 and 2400 PIW (600kN/m and 2400kN/m, respectively), with the following properties.

Trade name(s)	ICLAM-FORECH CSA 600 ICLAM-FORECH CSA 1200 ICLAM-FORECH CSA 2400
Belt style	POLYESTER / POLYAMIDE 300 X 2 Ply (2 plies/350 PIW) POLYESTER / POLYAMIDE 300 X 4 Ply (4 plies / 700 PIW) POLYESTER/POLYAMIDE 800 X 3 Ply (3 plies / 1350 PIW)
Top/carry cover material/compound	C-3194
Bottom/pulley cover material/compound	C-3194
Skim/ Cushion material/compound	C-2194
Fabric/textile gauge/properties	POLYESTER / POLYAMIDE 1.25 mm
Steel cord gauge/properties	NA
Carry cover thickness	4.8 mm to 12.7 mm
Pulley cover thickness	1.6 mm to 6.4 mm
Textile Gauge	1.25 mm
Nominal total thickness	Refer to specific items above
Country of origin/ Production facility location	INDIA. FIPL/Sonipat Haryana & FIPL/Cheyyar Tamil Nadu

Detailed testing results are presented next.

If you have any questions or need further information, please feel free to contact the undersigned.

DETAILED REPORT ON TESTING

Item # 1: FORECH-ICLAM CSA 600

Flame Test (Flame only time, seconds)		
Sample	Long / Warp (s)	
1. (Carry Down)	0	1
2 (Carry Down)	0	0
Average	**1**	
3 (Pulley Down)	0	0
4 (Pulley Down)	0	0
Average	**0**	

Electrical Resistance Test	
Sample	$X10^6$ Ω
1. Carry	0
2. Carry	0
Average	**0**
1. Pulley	0
2.Pulley	0
Average	**0**

Drum Friction Test (Still Air)		
Sample	Duration h:m:s 0:00:00	T(°C)
1. Carry	3:00:00	231
2. Pulley	3:00:00	219

Note: Drum Friction Test – carry side did not part during the test period.

Key> Long = longitudinal, or parallel to the warp; Trans = transverse, or parallel to the weft; (s) = second; h:m:s = hour:minute:second; T(°C): temperature (degrees Celsius).

Item # 2: FORECH-ICLAM CSA 1200

Flame Test (Flame only time, seconds)		
Sample	Long / Warp (s)	
1. (Carry Down)	0	0
2 (Carry Down)	0	0
Average	**0**	
3 (Pulley Down)	0	0
4 (Pulley Down)	0	0
Average	**0**	

Electrical Resistance Test	
Sample	$X10^6$ Ω
1. Carry	0
2. Carry	0
Average	**0**
1. Pulley	0
2.Pulley	0
Average	**0**

Drum Friction Test (Still Air)		
Sample	Duration h:m:s 0:00:00	T(°C)
1. Carry	3:00:00	234
2. Pulley	3:00:00	237

Note: Drum Friction Test – carry side did not part during the test period.

Key> Long = longitudinal, or parallel to the warp; Trans = transverse, or parallel to the weft; (s) = second; h:m:s = hour:minute:second; T(°C): temperature (degrees Celsius).

Item # 3: FORECH-ICLAM CSA 2400

Flame Test (Flame only time, seconds)		
Sample	Long / Warp (s)	
1. (Carry Down)	0	2
2 (Carry Down)	0	2
Average	**1**	
3 (Pulley Down)	4	4
4 (Pulley Down)	3	4
Average	**4**	

Electrical Resistance Test	
Sample	$X10^6$ Ω
1. Carry	0
2. Carry	0
Average	**0**
1. Pulley	0
2.Pulley	0
Average	**0**

Drum Friction Test (Still Air)		
Sample	Duration h:m:s 0:00:00	T(°C)
1. Carry	3:00:00	234
2. Pulley	0:20:46	349

Note: Drum Friction Test – carry side did not part during the test period.

Key> Long = longitudinal, or parallel to the warp; Trans = transverse, or parallel to the weft; (s) = second; h:m:s = hour:minute:second; T(°C): temperature (degrees Celsius).

Important Remarks:

1. This report remains valid for five years from the date on which it was signed. The report becomes invalid if the activities and/or categories tested are changed and/or a newer standard become available.
2. Test results contained in this report apply to those samples that were tested and may not be indicative of the total product from which the samples were drawn, or other manufactured batches of this type of product.
3. These test results on their own do not indicate the fire hazard of the tested materials under actual fire conditions and consequently, should not be applied to the assessment of fire hazard without taking into account additional supportive information.
4. Some information presented in this report has been provided by the applicant, and is not subjected to verification by the undersigned. Example: product description, trade name, color, dimensions, thickness, strength, configuration, base material, other components.
5. All conveyor belting being supplied for use shall be initially and periodically type tested to independently confirm the conveyor belting complies and remain in compliance with the standard. As a minimum, but not limited to, type testing shall be carried out:

A. Before any belting construction is supplied for use on the first occasion;
B. At least every 5 years;
C. Where the conveyor belt is to be manufactured at an alternative factory;
D. Where there is a change in supply of raw materials that may affect the performance;
E. Where there is a change or difference in the manufacturing process, which may affect the performance; and
F. Where the manufacturer/supplier/end user becomes aware of circumstances where product has been supplied and subsequently found to be non-compliant to this standard.

(Modified from AS 4606-2012)

Disclaimer:

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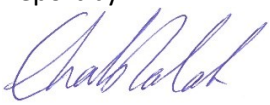
Report by:



Professor Ehab Zalok, Ph.D., P.Eng.

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