Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

Reactive product management- new arrivals

colourtex®
The Dyestuff Company

OUR VISION

To be the global market leader in Textile and Leather Dyes

OUR MISSION

To achieve sustainable growth and total customer confidence with utmost care of Environment and Ecology.

Our BELIEF & COMMITMENT

1. Safety, Health and Environmental excellence is the result of our attitudes, beliefs, and behaviors.
2. Safety is a Line Responsibility.
3. Safety is an integral part of every activity.
4. All Incidents and Injuries can be prevented.
5. Excellence in Safety is compatible with Excellence in Quality, Productivity and Profitability.

CoraCARE EF

Cora *CARE* EF

Reactive Dyes for

Sustainable

Colouration of Cellulosics

Cora CARE EF

What is CARE ?

CA = CARBON EMISSION SAVING

R = RESOURCE SAVING

E = ENVIRONMENT SAVING

colourtex®
The Dyestuff Company

Why Cora CARE EF?

- **In 2011, a group of major apparel and footwear brands and retailers made a shared commitment to help lead the industry towards zero discharge of hazardous chemicals (ZDHC) by 2020 in response to Greenpeace's Detox campaign. ZDHC/DETOX just starts to roll out globally through the textile brands**

- **Till now total 24 committed brands are following Detox Catwalk 2016**

- **When Greenpeace becomes more aware of p-CA free products, this may end up on DETOX commitment lists and p-CA containing products could get banned for DETOX retailer business.**

A real risk !

Why Cora CARE EF?

11 priority chemical groups

Restricted by Detox / ZDHC by 2020

1) Alkylphenols & ethoxylates
2) Phthalates
3) Brominated and chlorinated flame retardants
4) Azo dyes releasing carcinogenic amines through reductive cleavage
5) Organotin compounds
6) Poly- and Perfluorinated chemicals
7) Chlorobenzenes
8) Chlorinated solvents
9) Chlorophenols
10) Short-chain chlorinated paraffins
11) Heavy metals: cadmium, lead, mercury and chromium (VI)

CoraCARE EF range

Yellow component is under development

CoraCARE Orange EF

CoraCARE Scarlet EF

CoraCARE Red EF

CoraCARE Carmine EF

CoraCARE Green EF

CoraCARE Blue EF

CoraCARE Navy EF

CoraCARE Black EF

Benefits of application

FEATURES OF PRODUCT RANGE	BENEFITS TO CUSTOMERS
Reactive dyestuff range free from all banned amines (including p-CA free Black and Navy) & Heavy metals	▪ Ecologically viable to promote/ work for special brands following Detox 2020 & ZDHC. ▪ Brand value can be increased for dyer
Fast fixation dyestuff	▪ Dyer can short process cycle and compensate cost by production efficiency ▪ Saving of energy due to short cycle ▪ Dyer can use it in exhaust and continuos application
Less substantivity of hydrolyzed dye	▪ Easy washing off at low temperature resulting shortening of washing cycle. ▪ Saving of Energy &Water ▪ Better Fastness
Other features useful for application	▪ Dischargeable ▪ Low salt dyeable resulting in low load on effluent

Ecology report

Sr.No.	Test Perform	Specification	CoraCARE Orange EF	CoraCARE Carmine EF	CoraCARE Scarlet EF	CoraCARE Navy EF	CoraCARE Black EF
1	Determination of cleavable/carcinogenic arylamine	< 100ppm	ND.	ND.	ND.	ND.	ND
2	**Heavy Metals as per ETAD Specification**						
	Ag	100 ppm Max.	ND	ND	ND	ND	ND
	As	50 ppm Max.	NA	NA	NA	NA	NA
	Ba	100 ppm Max.	0.72	1	0.59	0.99	1.24
	Cd	20 ppm Max.	0.01	0.03	0.01	0.01	0.01
	Co	500 ppm Max.	ND	ND	ND	ND	ND
	Cr	100 ppm Max.	5.93	7.79	4.06	5.68	31.94
	Cu	250 ppm Max.	1.51	95.32	1.37	6.08	12.94
	Fe	2500 ppm Max.	124.60	602.00	209.80	234.30	177.10
	Hg	4 ppm Max.	NA	NA	NA	NA	NA
	Mn	1000 ppm Max.	1.93	3.88	1.95	1.89	9.51
	Ni	200 ppm Max.	1.77	2.54	1.58	3.16	5.52
	Pb	100 ppm Max.	2.57	1.34	0.43	2.87	2.27
	Sb	50 ppm Max.	ND	ND	ND	ND	0.21
	Se	20 ppm Max.	0.16	0.52	0.61	0.56	0.26
	Sn	250 ppm Max.	ND	ND	ND	ND	ND
	Zn	1500 ppm Max.	12.29	8.63	38.13	15.31	3.12

Where,

ND : Not Detected

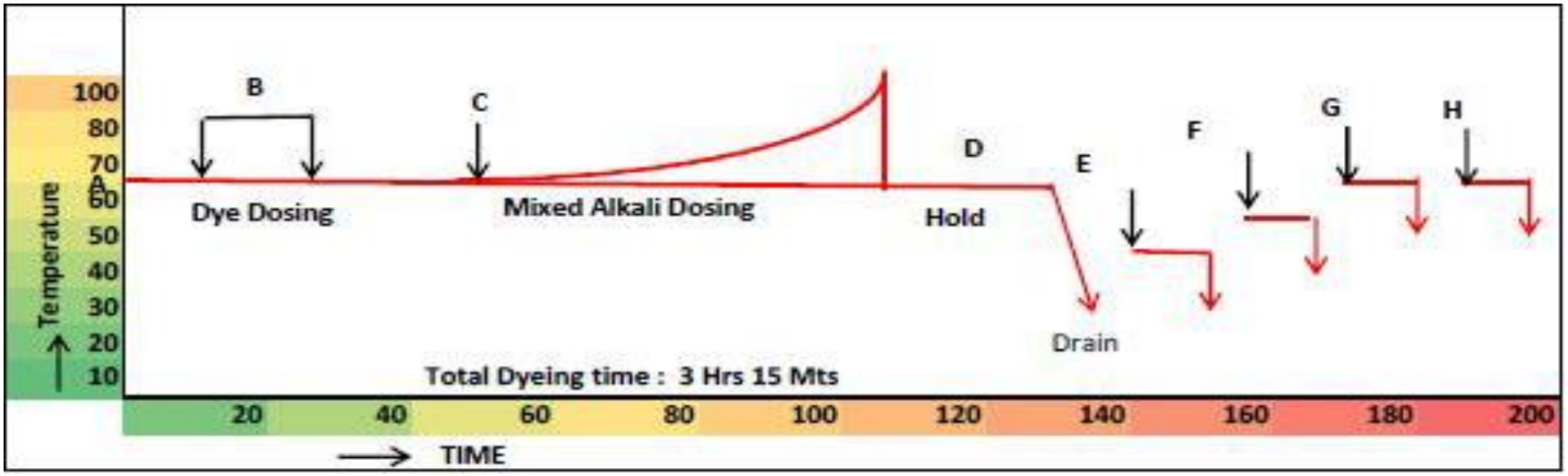
NA : Not Analysed

Minimum Detection limit 5 ppm for banned amines

Arsenic and Mercury tested at external lab (Intertek) and found ''Not detected''

Recommended dyeing cycle

Cora CARE process



A Salt
Auxiliaries

B Dye dosing for 10 mts

C Progressive alkali dosing (70%)
50 minutes

D Hold

E Rinse with water

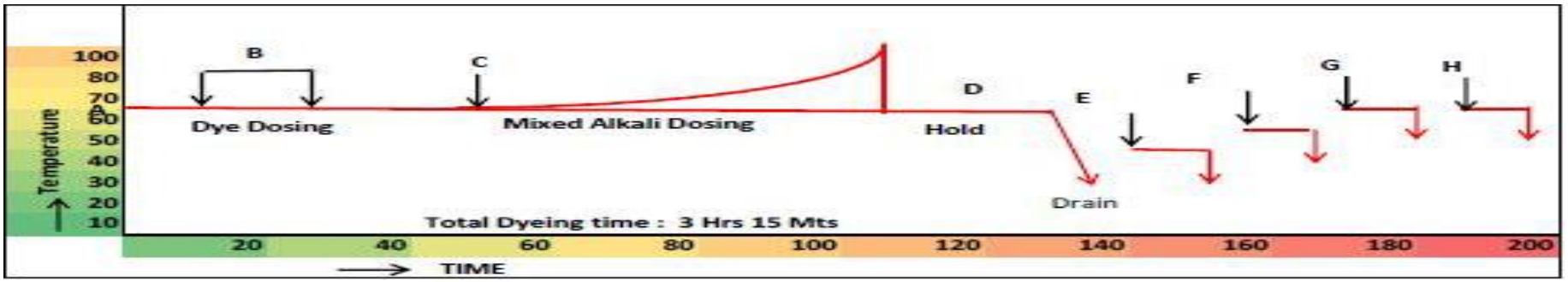
F Neutralise with Acetic Acid

G Wash with 2 g/l Levocol WRL

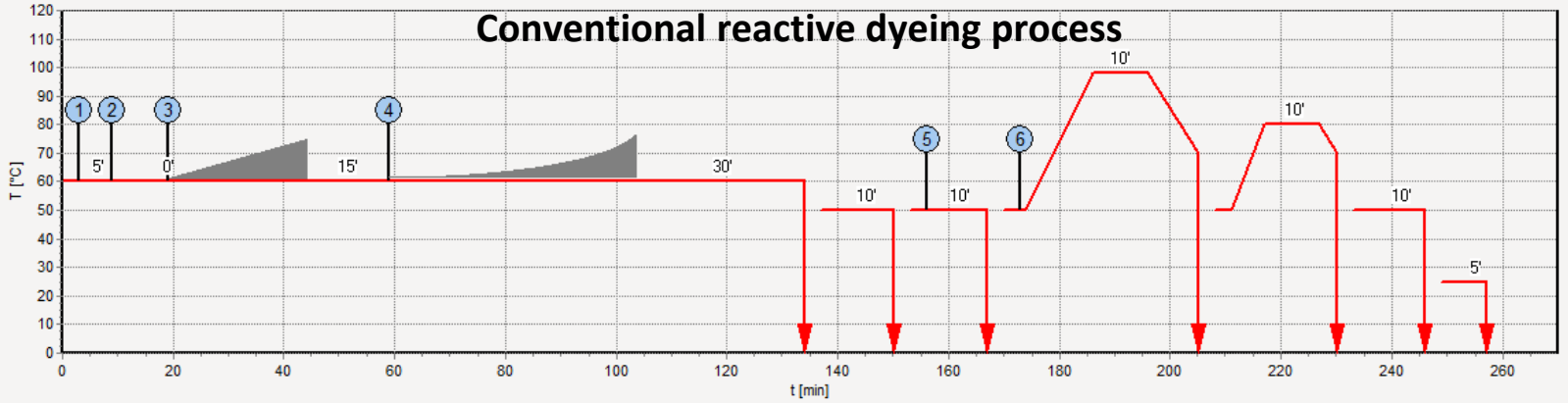
H Wash and adjust fabric pH 6.5

30 to 40% saving in water

Saving potential with Cora CARE



A Salt
Auxiliaries
B Dye dosing for 10 mts
C Progressive alkali dosing (70%) 50 minutes
D Hold
E Rinse with water
F Neutralise with Acetic Acid
G Wash with 2 g/l Levocol WRL
H Wash and adjust fabric pH 6.5



Saving of 60 minutes (23%) in dyeing process time

Suggested trichromy for Dark and Extra dark shades

BLACK SHADE

Cora CARE Black
Cora CARE Carmine/ Cora CARE Orange
(for shading)

For trichromy

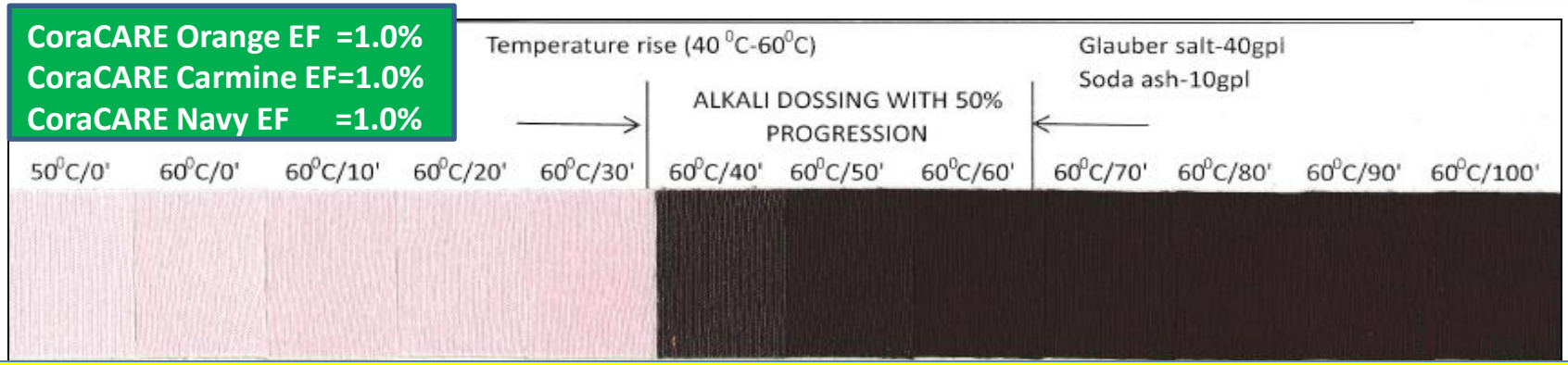
- Cora CARE Orange EF
- Cora CARE Carmine EF
- Cora CARE Navy EF

For trichromy(selected shades)

- Cora CARE Scarlet EF
- Cora CARE Carmine EF
- Cora CARE Navy EF

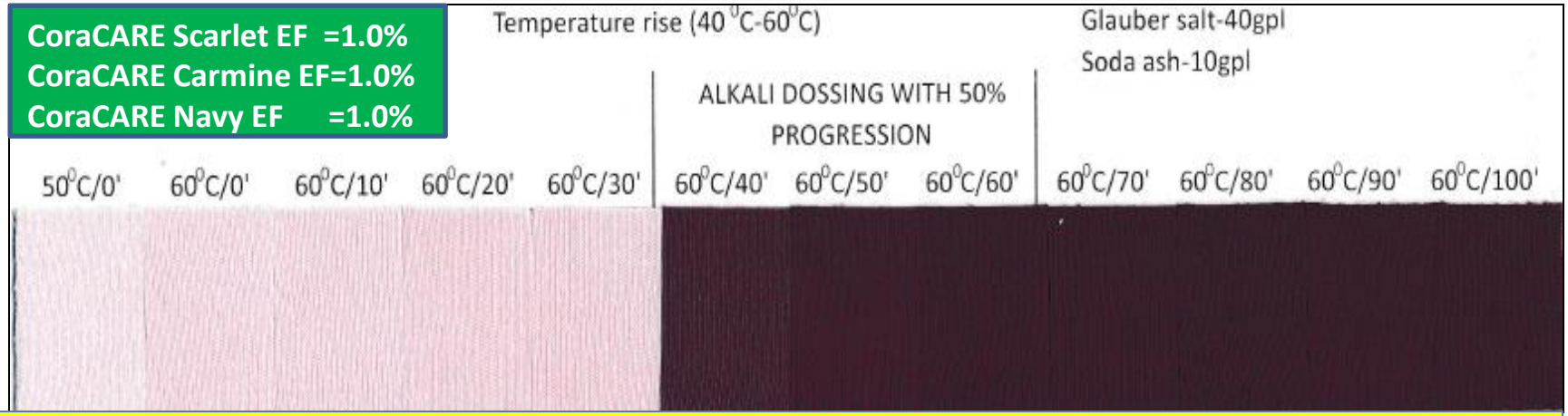
Dyestuff compatibility & Process shortening observation

CoraCARE Orange EF =1.0%
CoraCARE Carmine EF=1.0%
CoraCARE Navy EF =1.0%



DH	-6.13	-6.43	-6.34	-6.28	-6.31	-1.44	-0.54	-0.21	-0.14	-0.08	-0.05	Control
Str.%	1.03	1.23	1.39	1.51	1.63	57.26	82.63	95.89	96.46	99.78	99.84	100

CoraCARE Scarlet EF =1.0%
CoraCARE Carmine EF=1.0%
CoraCARE Navy EF =1.0%

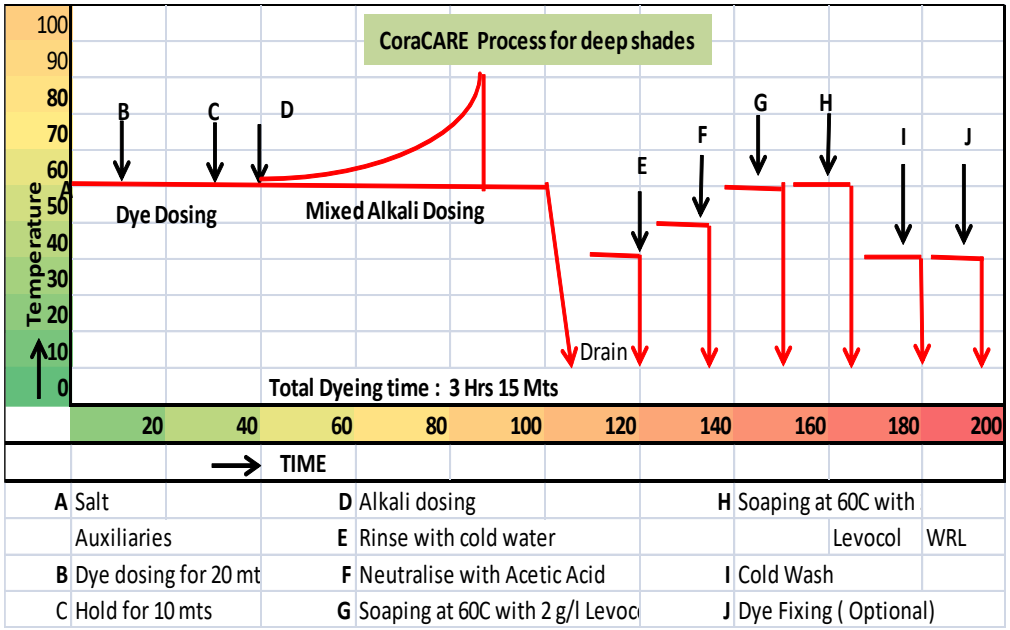


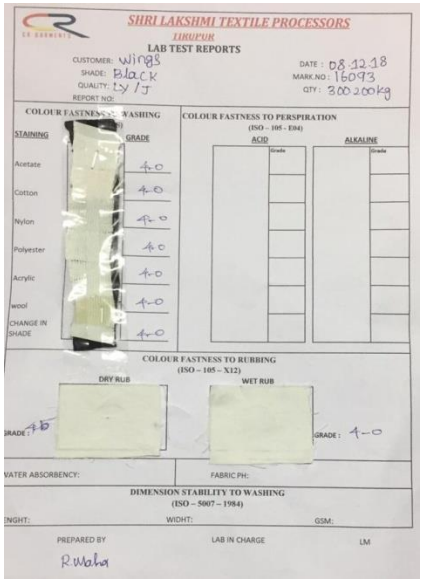
DH	2.22	2.23	2.05	2.09	1.91	0.97	0.42	0.20	0.12	0.02	0.00	Control
Str.%	1.28	1.65	1.76	2.04	2.07	68.36	88.60	98.34	98.42	99.46	99.86	100

Bulk trials 1 - Wash off
Sri Lakshmi Textile Processors, Tirupur

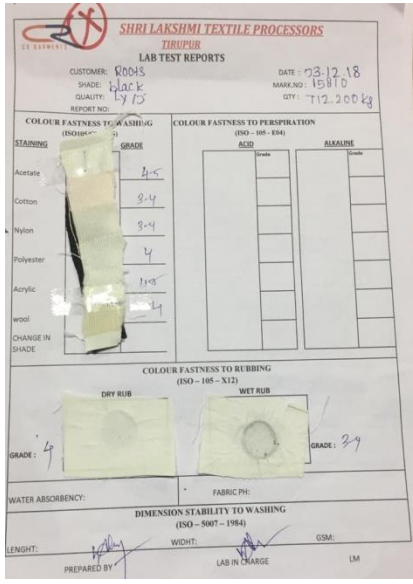
CoraCARE Carmine EF : 0.65%
CoraCARE Navy EF : 2.50%
CoraCARE Black EF : 10.50%

Dye fixing done in the padder during bulk trial





Fastness with CoraCARE process Tested by customer

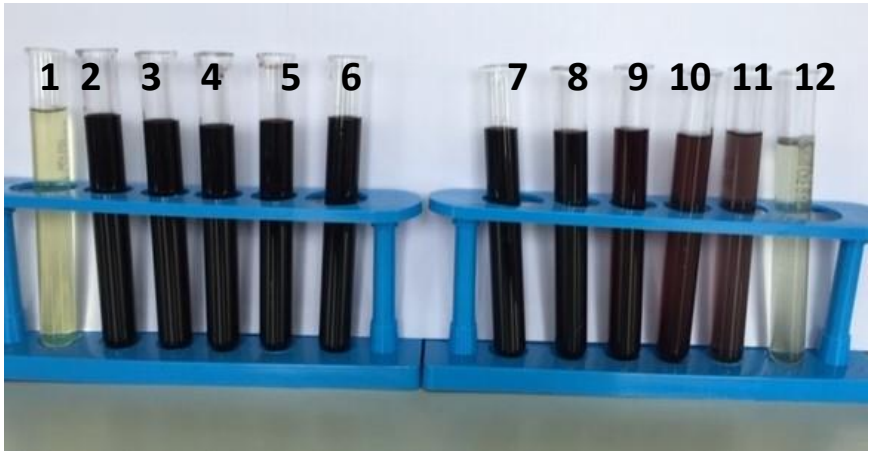


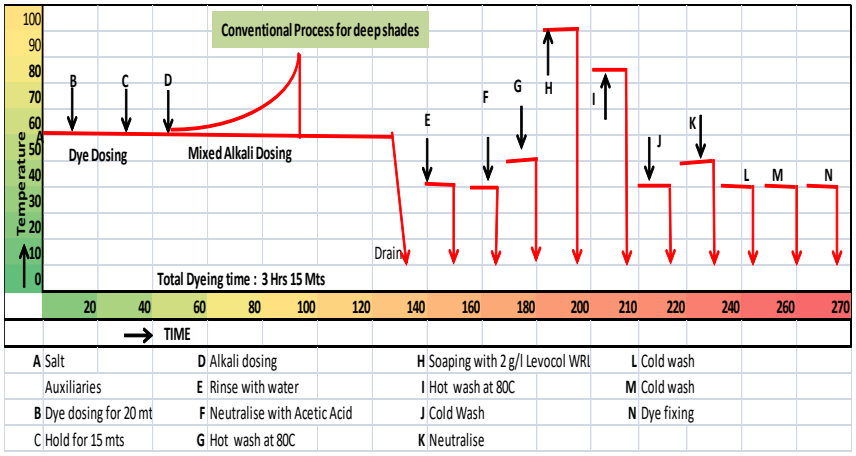
Fastness with Conventional process tested by customer

Bulk trials 2 – Wash off
Texwell Process, Tirupur

Conventional process

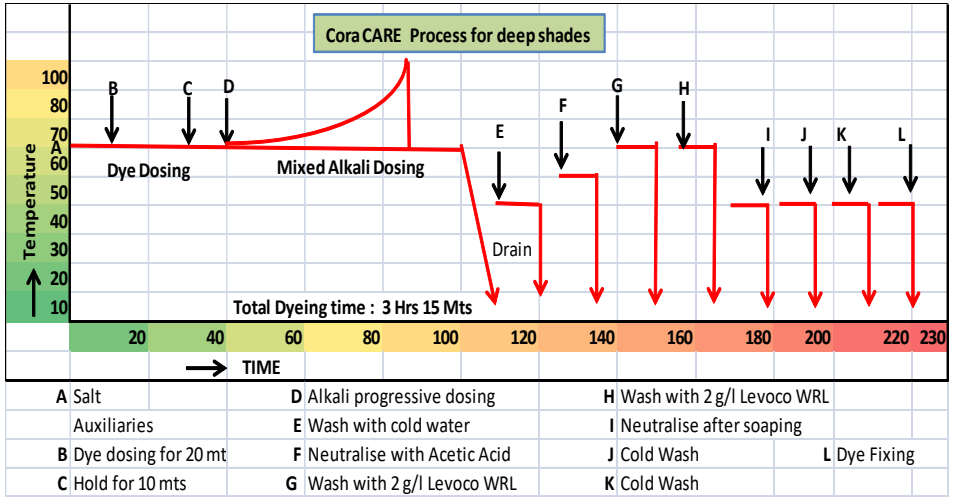
Corafix G.Yellow MER 150% :1.3%
Corafix Red ME4B 150% : 1.1%
Corafix Black GDN : 9.0%



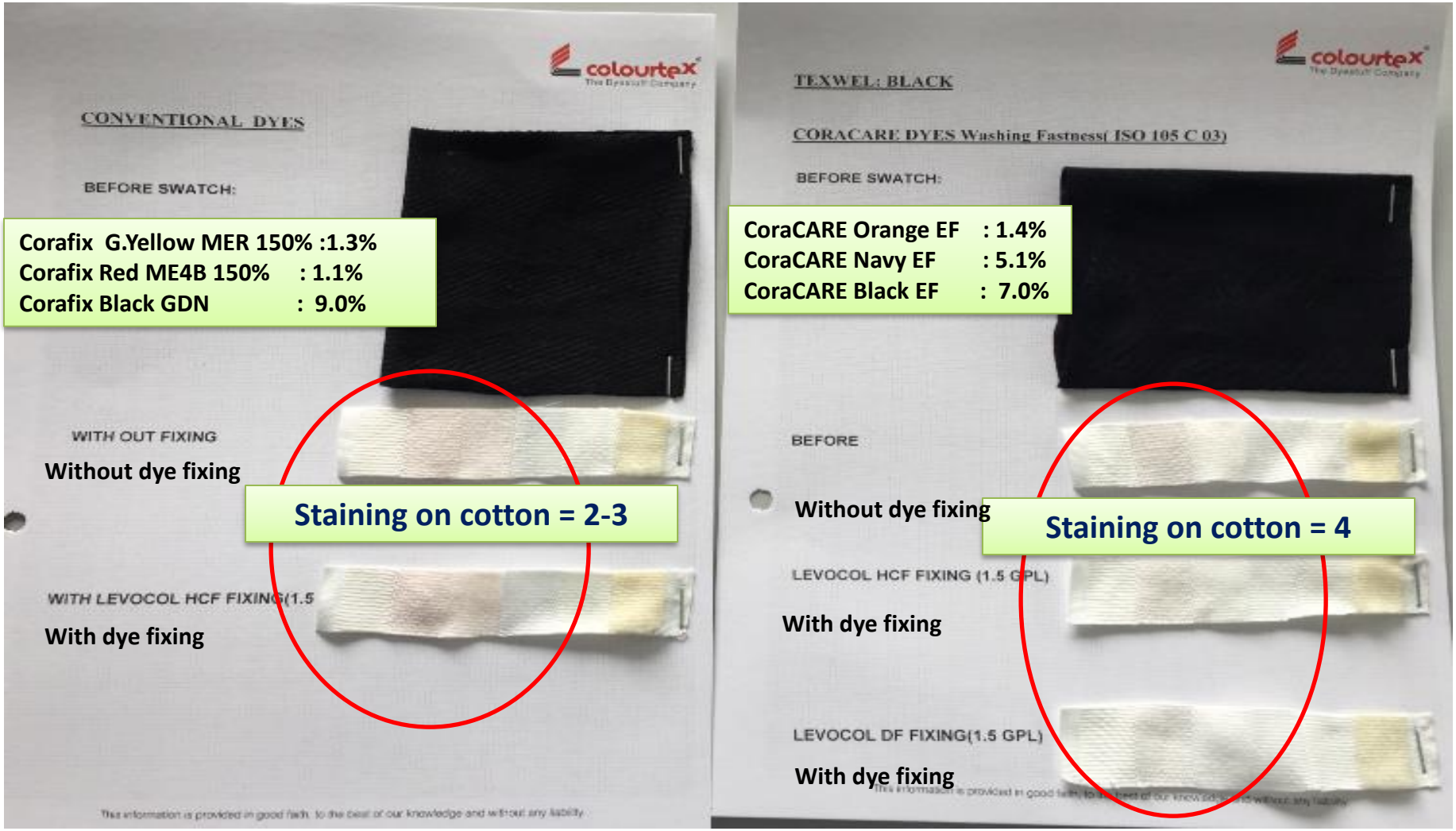


CoraCARE trial

CoraCARE Orange EF : 1.4%
CoraCARE Navy EF : 5.1%
CoraCARE Black EF : 7.0%



Comparative Fastness results
ISO 105 C10:C-60°C



Corafix Luminous Yellow XXB

High visibility safery apparels (HVSA)

- What are HVSA ?

High visibility products
are worn in many different settings to provide conspicuity o people working in areas where the wearer needs to be seen easily. Examples of this are motorways, roads, railways, airports, docks, construction sites and also by emergency workers and Security staff.

High visibility safery apparels (HVSA)

- **Class 1 defines the lowest visibility level e.g. High-visibility trousers with** two 5 cm reflective bands around each leg. These become Class 3 when worn with a Class 3 jacket.

✓ Surface area of fluorescent material to be at least 0.14 meter square.

✓ Surface area of reflective material to be at least 0.1 meter square.

✓ i.e. **Class 1 Garments are used where there is ample separation of workers from vehicle traffic and where the work scene is not complex usually where traffic speeds do not exceed 25 mph.**

- **Class 2 defines an intermediary visibility level. Example: vests.** Two 5 cm bands of reflective around body or on one 5 cm band around body and braces to both shoulders. (This class is required for motor vehicles in France and other continental EU member states).

✓ Surface area of fluorescent material to be at least 0.5meter square.

✓ Surface area of reflective material to be at least 0.13 meter square.

i.e. **Class 2 Garments are used where work activities take place in closer proximity to traffic and where these activities may divert worker attention from approaching traffic with speeds exceeding 25 mph.**

High visibility safery apparels (HVSA)

- **Class 3 defines the highest level of visibility. Example jacket with long** sleeves, jacket and trouser suit. Two 5 cm bands of reflective tape around the body, arms and braces over both shoulders.

✓ Class 3 should be worn when working within 1.2 meters of a Highway with traffic moving in excess of 50 km/h. Best to check with the safety officer on site as there is sometimes a requirement for 'Traffic Management' clothing to be worn on roads where speeds exceed 50mph.

✓ **i.e. Class 3 Garments are used by when worker must be noticeable throughout body movement and must be identifiable as a person 1,280 feet away.**

✓ Surface area of fluorescent material to be at least 0.8meter square.

✓ Surface area of reflective material to be at least 0.2 meter square.

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Class 1

Class 1 defines the lowest visibility level

- Fluorescent material ≥ 0,14 m²
- Retroreflective material ≥ 0,10 m²

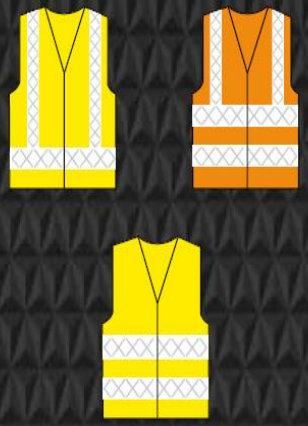
Or

- Combined material
  Fluorescent reflective ≥ 0,20 m²

Class 2

Class 2 defines an intermediary visibility level

- 1 horizontal band and 2 shoulder bands or, 2 horizontal bands and 2 shoulder bands or, 2 horizontal bands
- Trousers need 2 horizontal reflective bands circular on each trouser leg
- Bib and brace trousers: 1 horizontal band around the torso, 2 horizontal reflective bands circular on each trouser leg
- Fluorescent material ≥ 0,5 m²
- Retroreflective material ≥ 0,13 m²

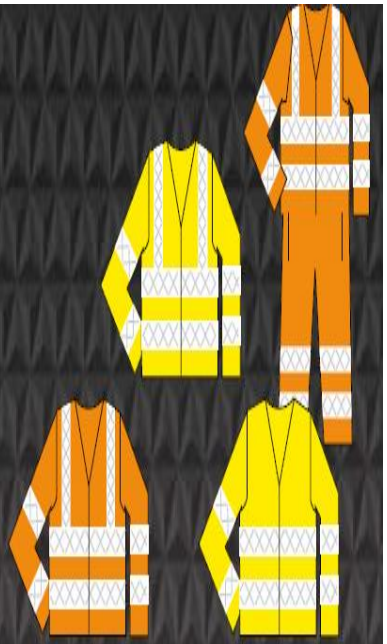


Required for any person working on or near A and B class roads

Class 3

Class 3 defines the highest level of visibility

- As Class 2 but with full length sleeves with 2 horizontal circular bands on each sleeve
- Fluorescent material ≥ 0,8 m²
- Retroreflective material ≥ 0,20 m²



What are the test to be approved ?

- **The test is performed in accordance with the EN 471:1994 OR ANSI/ISEA 107-2015 standard.**
- This standard describes the requirements for textiles dyed with fluorescent dyes which are destined for manufacturing high-visibility ‘warning’

clothing The "Official Journal

Of

- The European Union"

published the new

EN ISO 20471:2013 standard

on 28th June 2013, officially

EN 471


ISO 20471

replacing at the same time the existing standard EN 471:2003+A1:2007.

Approvals of EN ISO 20471:2013

AHMEDABAD TEXTILE INDUSTRY'S RESEARCH ASSOCIATION

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TEXTILE TESTING LABORATORY
ISO/IEC 17025 : 2005 NABL ACCREDITED
(Linked to Ministry of Textile)
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पी. ओ. आंबावाडी विस्तार, अहमदाबाद-380 015. भारत.

Cert. No. TC-5097

TEST REPORT

Format No.: TT 10/01/00

ULR No. TC5097 18 2 00000103F	
Test Report No: A/T/0949 2018-19	**Date: 06.10.2018**
Mill/Company/Customer:	**Colourtex Industries Pvt. Ltd.**

Date of Performance of test(s): 01.10.2018 to 06.10.2018

Sample Description : Hi-visible Yellow Fabric Sample1 -Recipe Corafix Lumi. Yellow XXB 5.00%

Testing as per International Standard: DIN EN ISO 20471:2013
Background Material:

Clause No.	Test Parameter	Test Method	Chromocity cordinates Test Results			Requirement as per DIN EN ISO 20471:2013	Performance level achieved (Pass/Fail)
5.1.1	Colour Performance (As Such)	DIN EN ISO 20471:2013	X	Y	βmin	Bmin :0.70	Pass
			0.3662	0.4902	0.8820	xy : 0.387, 0.610 xy : 0.356, 0.494 xy : 0.398, 0.452 xy : 0.460, 0.540	
5.2	Colour Performance (After Xenon exposure)	DIN EN ISO 20471:2013 ISO 105 B02	X	Y	Bmin	Bmin :0.70	Pass
			0.3806	0.4848	0.8242	xy : 0.387, 0.610 xy : 0.356, 0.494 xy : 0.398, 0.452 xy : 0.460, 0.540	

Approvals of EN ISO 20471:2013

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Test Report No: A/T/0949 2018-19	**Date: 06.10.2018**
Mill/Company/Customer:	**Colourtex Industries Pvt. Ltd.**
Date of Performance of test(s): 01.10.2018 to 06.10.2018	
Sample Description : Hi-visible Yellow Fabric Sample5 -Recipe Ramazol Lumi. Yellow FL 5.00%	

Testing as per International Standard: DIN EN ISO 20471:2013
Background Material:

Clause No.	Test Parameter	Test Method	Chromocity cordinates Test Results			Requirement as per DIN EN ISO 20471:2013	Performance level achieved (Pass/Fail)
5.1.1	Colour Performance (As Such)	DIN EN ISO 20471:2013	X	Y	βmin	Bmin :0.70	Pass
			0.3646	0.4853	0.8731	xy : 0.387, 0.610 xy : 0.356, 0.494 xy : 0.398, 0.452 xy : 0.460, 0.540	
5.2	Colour Performance (After Xenon exposure)	DIN EN ISO 20471:2013 ISO 105 B02	X	Y	Bmin	Bmin :0.70	Pass
			0.3813	0.4773	0.8184	xy : 0.387, 0.610 xy : 0.356, 0.494 xy : 0.398, 0.452 xy : 0.460, 0.540	

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Thanks