

Guide to Belcoro Certification

The use of the Belcoro Mark for Autocoro yarns and fabrics made of these yarns is protected under the Belcoro Certification Programme.

There are two Belcoro Certification Programmes:

1. Certification of yarns produced on the Autocoro automatic rotor spinning machine.
2. Certification of woven and knitted fabrics made of Autocoro yarns.

The preconditions for the certification of textile products are set out in the brochure attached hereto. The brochure also contains information on the testing conditions to be met in the Belcoro tests and on the Belcoro Standards.

An example of how the test results are evaluated and how they are related to the Belcoro Standards will elucidate the programme. The information also covers the labelling of the certified products with the Belcoro Mark.

1. Certification of Autocoro Yarns

The certification criteria for Autocoro yarns cover exclusively those yarn characteristics, which define the production performance of the yarns in the manufacturing processes downstream of spinning.

The basic requirement for successful certification of yarns is that they are produced on Oerlikon Schlafhorst Autocoro rotor spinning machines using Oerlikon Schlafhorst spinning components in all Autocoro spinboxes. Only spinning mills producing yarns under these conditions shall be eligible for Belcoro registration and, if it is proved that they satisfy the Belcoro criteria, for a Belcoro licence.

1.1 Conditions for the Certification

For the certification of a quality of yarn, the Oerlikon Schlafhorst textile testing laboratory TexLab will need **five (5) test packages** (e.g. cross-wound packages) of the yarn to be certificated. Each test package should contain a yarn length of no less than 3,000 m. It should be made sure that the test packages are labelled correctly and completely, as specified under item 2.3 «Labelling of sample packages» in the Data Sheet for the Belcoro Certification. Each package should be

2/5

labelled and marked. In addition, the company applying for a licence should provide a report on the results of its own tests on the yarn concerned and indicate the intended use of the yarn to be certificated.

2. Certification of textile fabrics

Textile fabrics made from Autocoro yarns, preferably from already certificated Belcoro yarns, can also be certificated under the Belcoro scheme. The certification criteria cover the wear or use properties which the wearer or user expects of the textile concerned. For the certification of a textile fabric, proof has to be furnished that the fabric concerned has been made from Autocoro yarns, but the fabric need not consist exclusively of Autocoro yarns. Combinations of different types of yarn in a fabric, such as ring yarns and Autocoro yarns, are also admissible for certification. However, the greater portion of the fabric should in each case consist of Autocoro yarn.

2.1 Requirements for the Certification

Tests on textile fabrics are carried out on ready-made garments only, considering that test results obtained from fabrics may differ from those obtained from ready-made garments. If a ready-made garment produced in several different colours is to be certificated, a separate test has to be conducted for each colour.

For the certification, **three (3) pieces of the ready-made garment** (e.g.T-shirts) will be required. To make sure that there can be no confusion, the textiles to be tested have to be marked and labelled as specified in items 3.2 to 3.4 «Labelling of the fabric» of the Data Sheet for the Belcoro Certification.

In addition, the company applying for a licence should provide a report on the results of its own tests on the fabric concerned and indicate its intended use.

3. Test conditions

All tests are carried out in standard reference atmosphere 65% +/- 2% relative air humidity and 20 °C +/- 4 °C temperature.

The material to be tested is exposed to the standard reference atmosphere at least 12 hours before the start of the test.

3.1 Test on yarns

Type of test	Yarn strength / elongation	Yarn evenness / imperfections
Speed	5000 mm/min	400 m/min
Time of test	-	2,5 min
Number of sampling tests	100 breaks per package	1 test per package
Pre-tension	0,5 cN/tex	0,5 cN/tex
Length between clamps	500 mm	-
Testing instrument	Statimat ME	Uster Tester 4 und 5
Applicable standards	DIN EN ISO 2062	ISO 16549

3.2 Tests on textile fabrics

Type of test	Fastness to perspiration	Fastness to laundering	Fastness to rubbing
Temperature	37°C +/- 2°C	According to care labelling	-
Evaluation	Change in colour, bleeding of colour and staining of all types of fibres in the accompanying multi-fibre fabric	Change in colour, bleeding of colour and staining of all types of fibres in the accompanying multi-fibre fabric	Bleeding of colour and staining of the rubbing fabric
Testing instrument/ auxiliary material	Perspiration-Meter, accompanying multi-fibre fabric	Household washing machine, accompanying multi-fibre fabric	Crockmeter, cotton rubbing-fabric
Applicable standards	DIN EN ISO 105-E04	DIN EN ISO 105-C06	DIN EN ISO 105-X12

Type of test	Dimensional stability	Abrasion resistance	Pilling tendency
Temperature	According to care labelling	-	-
Evaluation	Indicate minimum or maximum values of all measured sections	Indicate worst rating of all tests	Indicate worst rating of all tests
Testing instrument/ auxiliary material	Household washing machine	Martindale	Martindale
Applicable standards	DIN EN ISO 3759 DIN EN ISO 6330 DIN EN ISO 5077	DIN EN ISO 12947-1 DIN EN ISO 12947-4	DIN EN ISO 12945-2

4. Belcoro Standards for yarns and textiles

The Belcoro Standards for yarns are indicated in graphs which show the limits of the yarn values that can be achieved, both for weaving yarns and knitting yarns. The values are shown by material or material blend used and by yarn fineness. It must be noted that the Belcoro Standards for yarns depend in large measure on the material the yarn is made of and on the twist level of the yarn. The requirements of the standards should be met 100 %, however, the deviation of one test value from the indicated quality standard is acceptable. The deviating test value with its confidence interval should however lie within the indicated limits.

As a wide variety of materials and blends thereof can be spun on the Autocoro, the Belcoro Standards indicated here are only an extract from the full range of Belcoro Standards. If materials or blends are spun that are not included in the list, the Oerlikon Schlafhorst TexLab can request the standards concerned from its comprehensive data base and inform the applicant correspondingly. Further certification criteria, such as strength variation and elongation variation are in the process of being established. These criteria, too, cover quality characteristics that influence the yarn performance in the downstream production processes in decisive manner. The Belcoro Standards for textile fabrics are shown in a table of values. The test values ascertained for the purpose of certification must lie within the indicated limits for being eligible for certification. When the Belcoro Standards are met, the material tested is given a registration number which will be shown on the certification document and in the licence contract. Oerlikon Schlafhorst reserves the right to alter the certification criteria at any time.

5. Example for the analysis of the test results

The test results for yarns and textile fabrics are compared with the Belcoro Standards for yarns or textile fabrics:

Example: Certification of a yarn quality

The following are the results of a test carried out on a 100 % cotton yarn of the fineness 30 tex (Nm 34, Ne 20) for knitting applications.

Tested characteristic	Value ascertained	Confidence interval (+/- Q95%)	Belcoro Standards limit	Check I	Check Q95%	Check II
Tenacity [cN/tex]	13,0	0,2	Minimum 12,0	✓		
Elongation [%]	6,0	0,1	Minimum 5,7	✓		
Irregularity [CV %]	12,8	0,3	Maximum 13,5	✓		
Thin places (-50%) / km	6	2	Maximum 10	✓		
Thick places (+50%) / km	45	6	Maximum 40	-	34 - 46	✓
Neps (+280%) / km	18	3	Maximum 28	✓		

The number of thick places lies outside of the Belcoro Standards, but the confidence interval ascertained lies within the limit values. Therefore, the yarn can be given the Belcoro Certification.

6. Labelling with the Belcoro Mark

Together with the licence the licensee will be provided with relevant publicity material consisting of Belcoro stickers or labels and, in addition, with the Belcoro Mark in the form of a correspondingly formatted data file.

Stickers

- Stickers for letters 25 x 27 mm
- Stickers for card boxes 458 x 193 mm

Under the Belcoro licence agreement, the licensee will receive 500 stickers of either size. Belcoro-authorized companies can place subsequent orders for stickers against payment. The Belcoro registration number must be mentioned in such orders. On request, the order address will be sent.

Labels

The labels in the size 65 x 20 mm, 70 x 25 mm and 30 x 70 mm are either woven or printed. Each licensee will be provided, together with the licence, with 500 labels, at the licensee's choice, either of the woven or the printed type. Belcoro-authorized companies can place subsequent orders for labels against payment. The Belcoro registration number must be mentioned in such orders. On request, the order addresses will be sent. If requested by a licensee and approved by Oerlikon Schlafhorst, the Belcoro Mark may also be used on the licensee's own stickers, labels, POSmaterials or in advertisements. In such cases the Belcoro Mark as registered trade mark must be followed by ®.

5/5

7. Return of the application papers

The completed data sheet and the material to be tested should be sent to the following address:

**Oerlikon Schlafhorst
Zweigniederlassung der
Oerlikon Textile GmbH & Co. KG
Mrs. Christel Haselier
Textillabor TexLab
Blumenberger Strasse 143 - 145
D-41061 Mönchengladbach
Germany**

8. Do you wish to know more about Belcoro?

To keep you up to date about Belcoro, why not visit our homepage under **www.belcoro.com**.

There, you will find additional information including:

- Trade Fairs and Exhibitions where you will find a Belcoro Boutique
- Products that have so far been awarded the Belcoro certification
- Textile producers holding a licence for the use of the Belcoro Mark
- any many more things of interest

If you have any specific question regarding the various topics concerning Belcoro, just send us your question by e-mail to belcoro@schlafhorst.de. We will be pleased to give you the answer.