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DENIM FABRIC FINISHING



Overview

- Why denim finishing?
- Denim finishing trends
- Finish examples

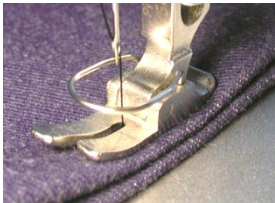


Standard production process flow for denim garments



1) Fabric production:

spinning > pretreatment (warp yarn) > bottoming (optional) > Indigo dyeing > topping (optional) > sizing > weaving > desizing



2) Garment manufacturing (making up etc.)

3) Garment finishing:

scraping, brushing, washing, over dyeing, bleaching, spraying, softening etc.



New trend for the last 4 – 5 years:

Finishing of denim fabrics before garment manufacturing

- denim mills have invested in new machines as well as in the development of processes and techniques
- this trend is sustainable and will be continuing in the upcoming collections
- many denim fabric producers are already finishing 30 – 50 % of their fabric output

New production process flow for denim garments

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2) Fabric finishing

3) Garment manufacturing (making up etc.)

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Examples for denim fabric finishing – keywords:

- coating, “PU”
- resin finish
- over-dyed, reverse-dyed fabric
- flat or „ammonia“ finish
- printing
- spray finish

Often several of the above mentioned finishes are combined

Why Denim Fabric Finishing?



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Advantages of denim fabric finishing:

One quality of denim fabric can be used to produce many different types of finishes

- quicker response to market and fashion demands
- higher flexibility in production
- more design options available already in fabric stage
- bigger variety of wash-down effects possible
- increased added value

Current Trends



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- coating with pigments
- coating with indigo
- fabric character and soft handle of denim have to be maintained



Current Trends



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Over-dyeing of denim fabrics

- subtle coloration
- natural colours

Reverse-dyed fabrics

- selvedge denim



Resin finish

- flat look, vintage look
- raw denim, dark denim (non-washed look)
- authentic used effects



Shiny finish

- coating with metallic glitter pigments
- coating with polymers, calendering
- soft handle



Current Trends

Leather finish

- coating with elastic polymers
- soft handle
- wash permanent

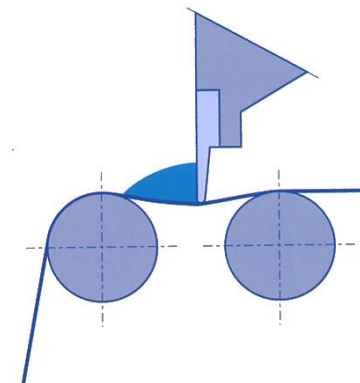


Printed denim

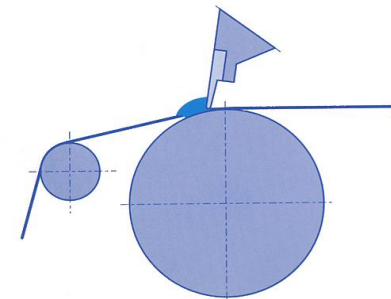
- animal skins (tiger, zebra)
- floral designs
- camouflage prints
- graphic patterns



- coated denim fabrics are present in most collections
- due to the huge variety of achievable effects they are an important area for further developments
- coatings are applied as paste or unstable foam (often incorrectly termed “stable foam” in denim mills)
- terminology:



knife on air



knife on roll

By coating multiple effects and fabric properties can be obtained:

- tinting / over-dyeing with pigments, indigo, sulphur dyes
- modification of handle and lustre / brilliance, e.g. rubber touch, permanent softness, silk touch, paper touch
- modification of the wash-down behaviour, especially in case of two layer coating
- application of fixing agents on dark shades, black
- often followed by calendering

Applicable on denim fabric as:

- traditional resin finish by padding (PERFIXAN CLY)
- polymer finish by coating (e.g. acrylates)

Resin finish modifies the properties of denim fabrics as follows:

- flat finish – in denim mills not having available mercerizing units
- semi-flat finish – less distinct flat look
(“flat finish”: less contrast after wash-down; vintage 70s look)

Further properties of resin finished denim fabric:

- scraping effects are more natural and authentic
- combination with pigments is possible
- dimensional stability
- permanent handle modification, e.g. softness
- dark-denim fabrics remain darker in wash-down and after multiple washes
- improvement of the crock and wash fastness – in combination with fixing agents

- The final result of any fabric finishing recipe strongly depends on:
 - fabric: weight, weave type, composition (elastane content), colour, hydrophility etc.
 - application technique: knife clearance etc.
 - garment finishing method: wash-down technique, mechanical treatments etc.
- Any recipe needs to be fine-tuned on the customer's fabric!
- Not limited to denim fabric

Finish Examples



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Pigment coating

Two-layer coating process in order to achieve unusual wash-down effects

Base coat:

Unstable foam coating

PERICOAT AC 220

PERICOLOR BLACK PIGMENT

Top coat:

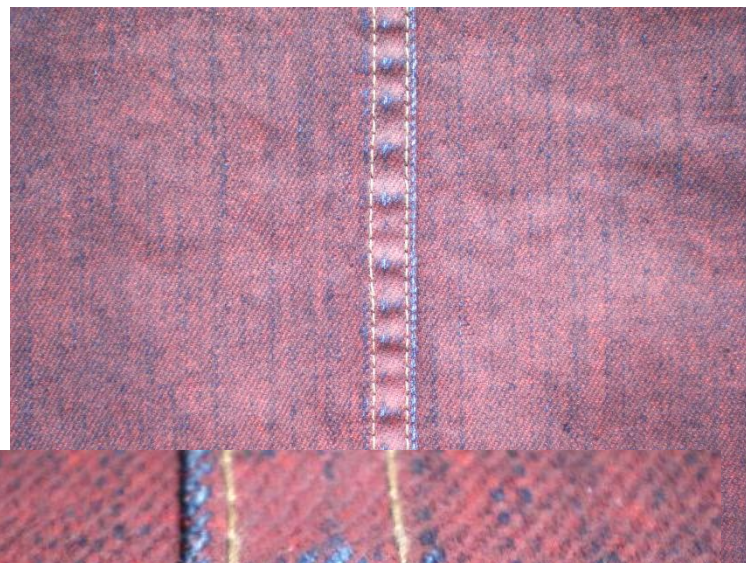
Paste coating

PERICOAT AC 230

PERICOAT PU 326

PERISOFT NPE

PERICOLOR RED PIGMENT



Pigment coating

Unstable foam coating recipe
based on:

PERICOAT AC 220

PERICOAT COMPOUND KAO

Indigo pigment



Finish Examples



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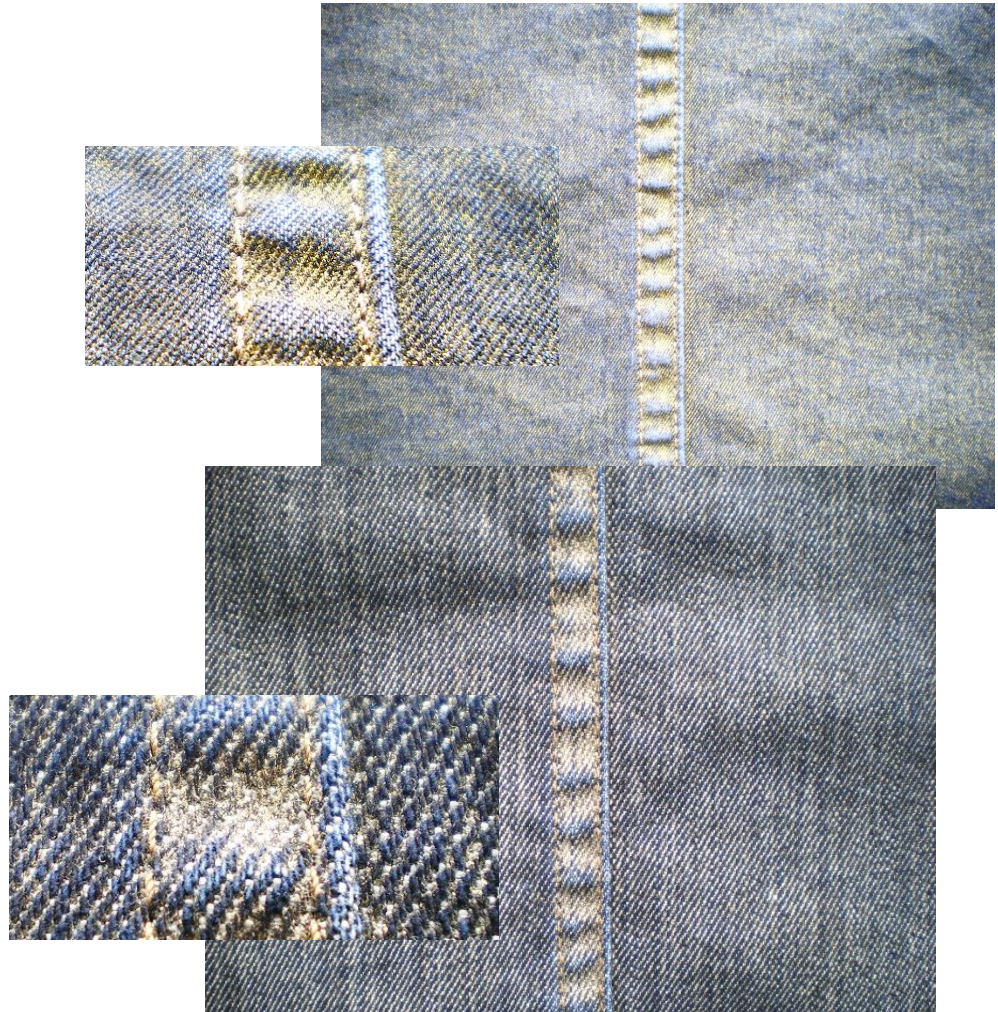
Glitter effect coating

Paste coating recipe based on:

PERICOAT AC 220

PERISOFT NPE

PERICOAT PEARL GOLD



Finish Examples



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Glossy finish

Two layer paste coating with
calendering after base coating

Base coat

PERICAOT AC 230

PERICOAT PU 345

PERICOAT PU 326

Top coat

same as base coat



Artificial leather

Two layer paste coating with calendering after base coating

Base coat

PERICOAT AC 220

PERICOAT PU 326

PERICOAT PU 345

PERISOFT NPE

PERICOLOR BLACK PIGMENT

Top coat

PERICOAT AC 220

PERICOAT PU 326

PERICOAT PU 345

PERISOFT SIV

PERICOLOR BLACK PIGMENT



Inverse denim

Stable foam coating followed by
calendering

PERICOAT AC 220

PERICOAT PU 326

PERICOAT COMPOUND KAO

PERICOLOR WHITE PIGMENT



Finish Examples



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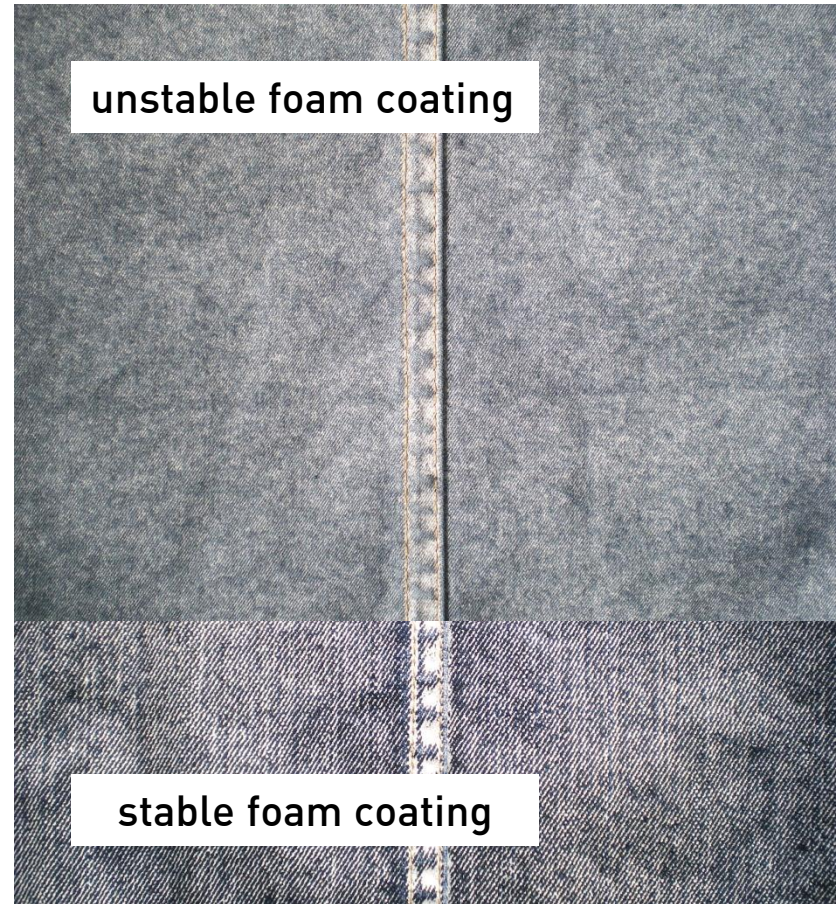
Inverse denim

Unstable foam coating recipe
based on:

PERICOAT AC 220

PERICOAT COMPOUND KAO

PERICOLOR WHITE PIGMENT



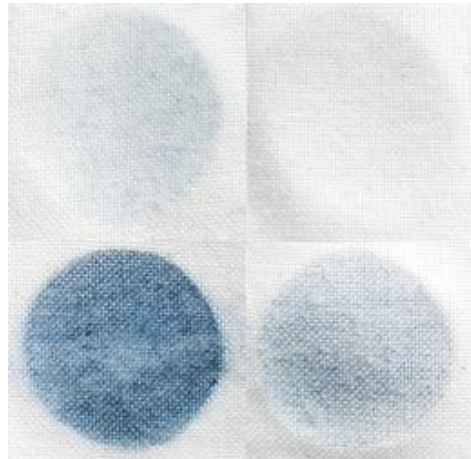
Resin finish

Paste coating recipe based on PERICOAT AC 220

Improvement of rubbing fastness:

unfinished finished

dry



wet

with PERICOLOR BROWN PIGMENT:



Resin finish

Padding recipe based on:

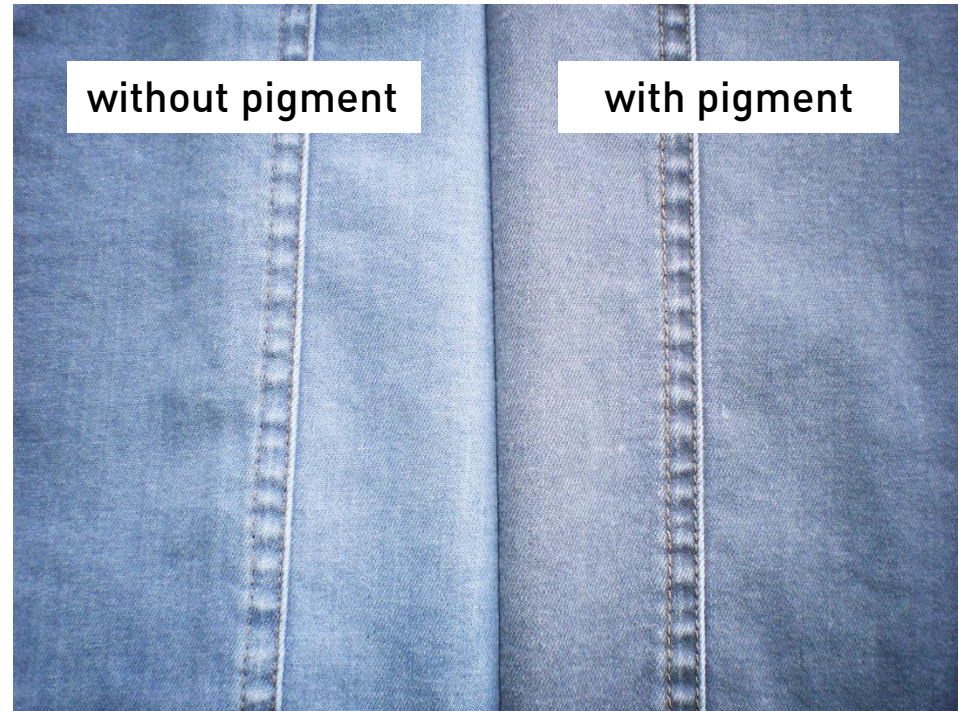
PERFIXAN CLY

PERISTAL KSV

PERICOAT AC 225

PERISOFT NPE

PERICOLOR BROWN PIGMENT



Finish Examples



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Reverse side coating

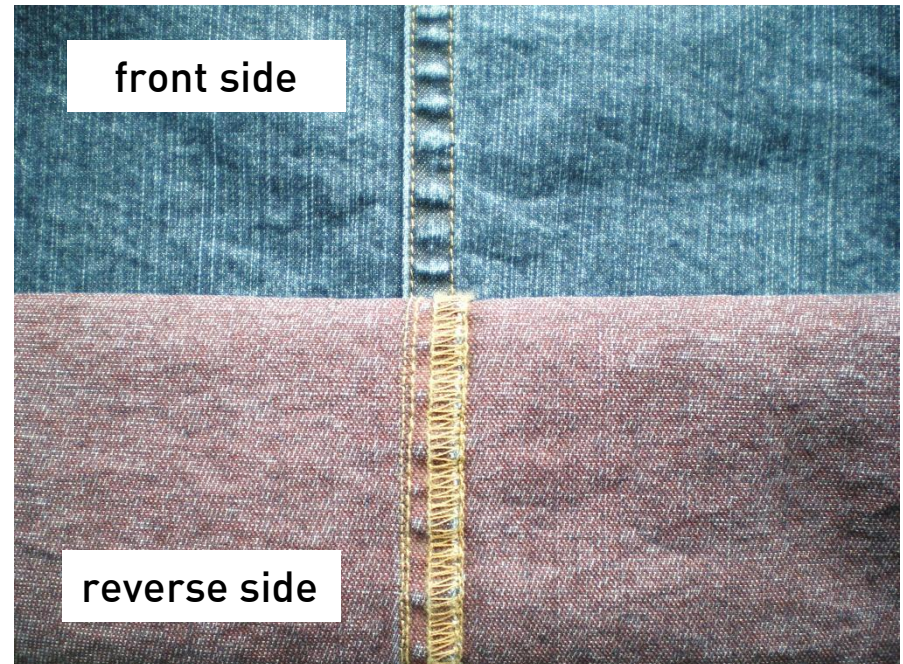
For fashionable colour selvedge denim



Paste coating recipe based on:

PERICOAT VA 110

PERICOLOR RED PIGMENT



Protect print

Printed parts of the fabric show
less abrasion after wash-down

Printing paste based on:

PERICOAT PU 310



Selection of further products used:

Foam coating:

PERIPRINT ZP

PERICOAT FOAMER HPO

PERICOAT STABILIZER STA

Paste coating:

PERIPRINT TN

PERICOAT CROSSLINKER MV

Heavy stone wash:

PERIZYM 58

PERLAVIN JAB

PERISOFT LOF/R



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The above indications are based on the latest state of our knowledge. Due to different operational conditions and requirements these are guidelines only. A legally binding assurance cannot be drawn from our indications. Our technical staff will always be at your disposal to support you in testing our auxiliaries and to answer further technical questions.

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