

WEAVING

CONSTRUCTION OF WOVEN FABRIC

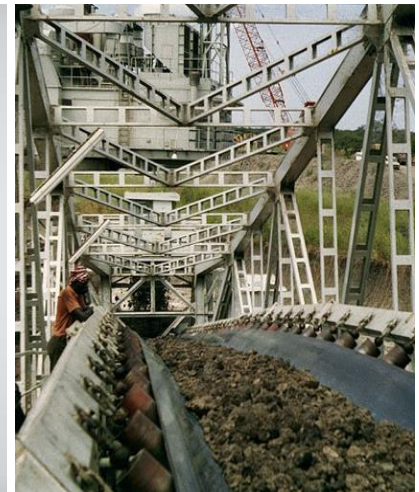
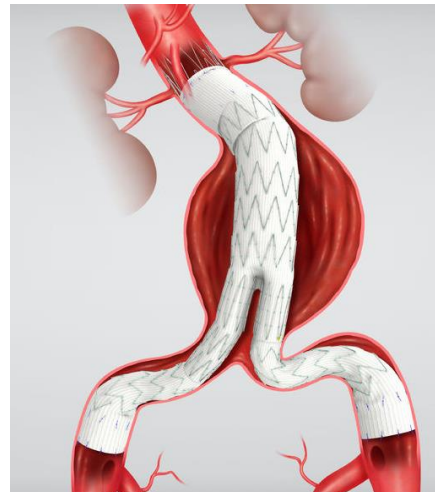


QUESTIONS:

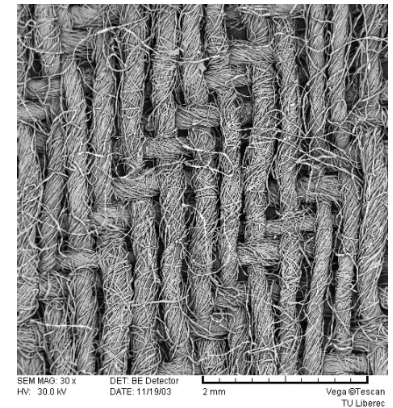
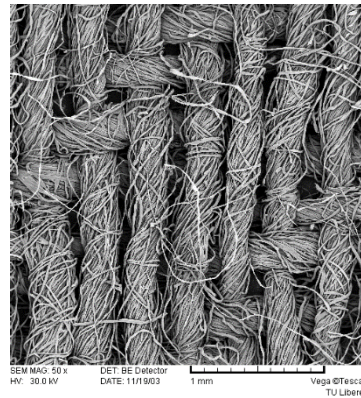
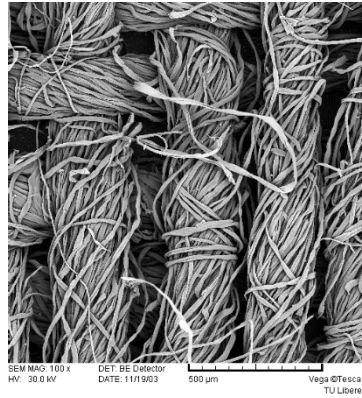
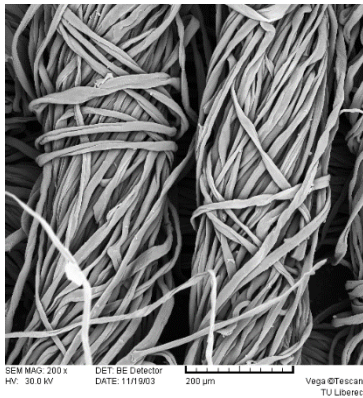
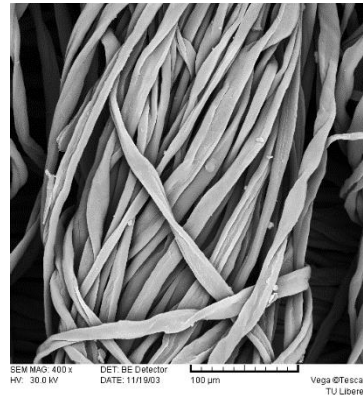
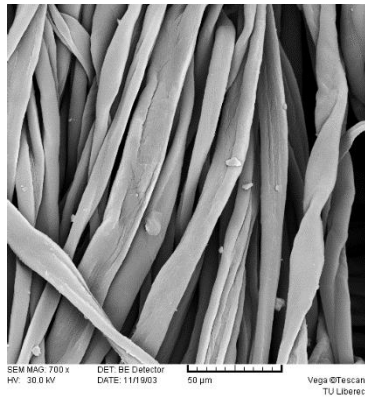
What we want to produce?

+

For what we want to use the fabric?



Structure and Composition of Woven Fabric

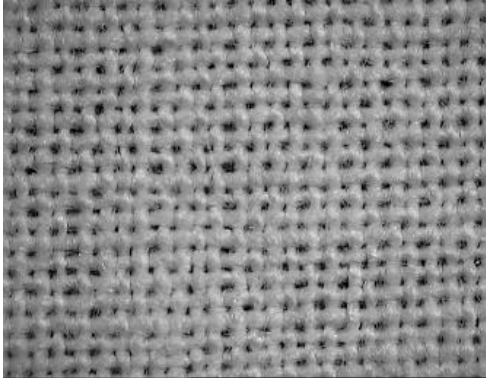


Construction of Woven Fabric COLOUR EFFECT POSSIBILITIES

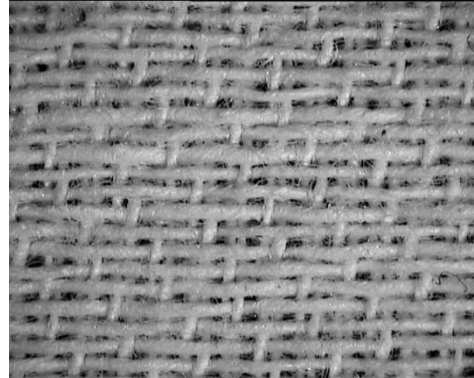


Construction of Woven Fabric

INTERLACING/WEAVE EFFECT POSSIBILITIES



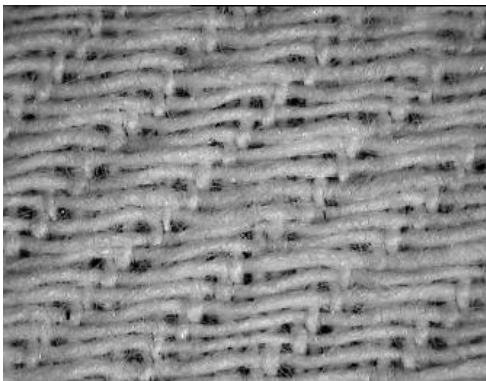
Structure of woven fabric
given by cam shedding mechanism



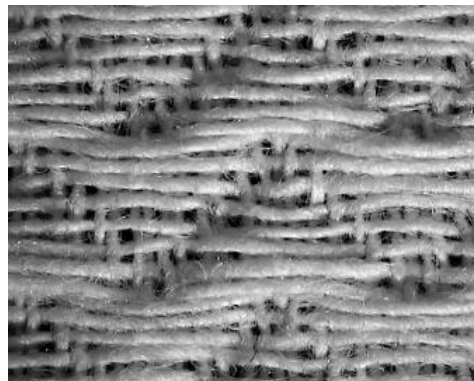
Structure of woven fabric
given by dobby shedding mechanism



Structure of woven fabric
given by jacquard shedding mechanism



frame weaving

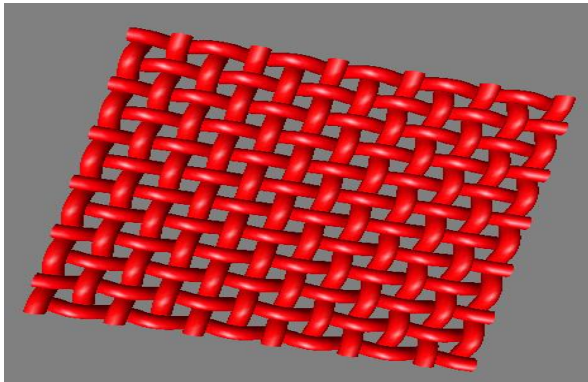


jacquard weaving

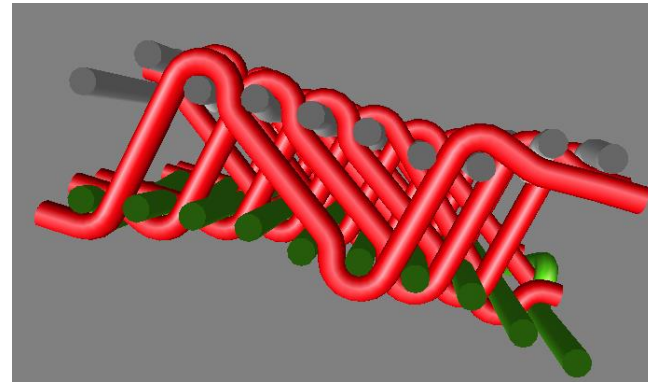
Construction of Woven Fabric

Interlacing / weave effect possibilities

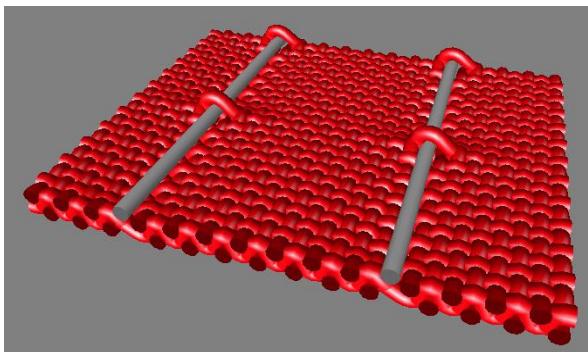
WEAVE TECHNIQUES



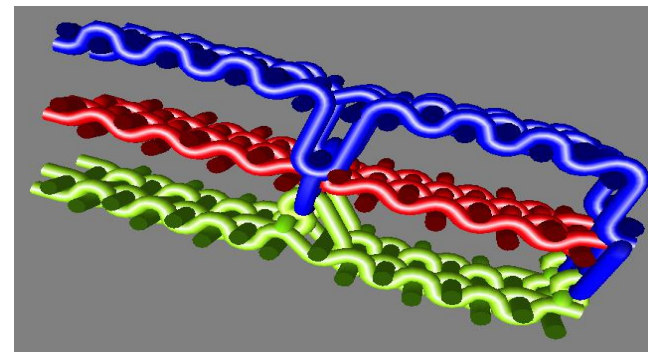
Plain weave technique



Multi-weft weave technique



Multi-warp weave technique



Multi-fabric weave technique

Basic Parameters of Construction of Woven Fabric



PARAMETERS OF INPUT MATERIAL

(staple yarn, multifilament yarn, monofilament yarn)

- ✓ Yarn count for warp and weft [tex]
- ✓ Linear density fibres [kg/m³]
- yarn diameter [mm]

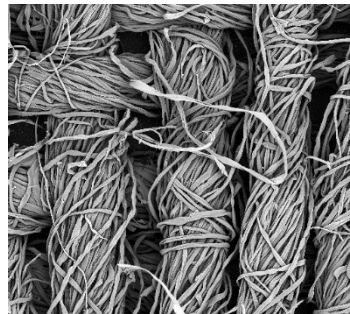
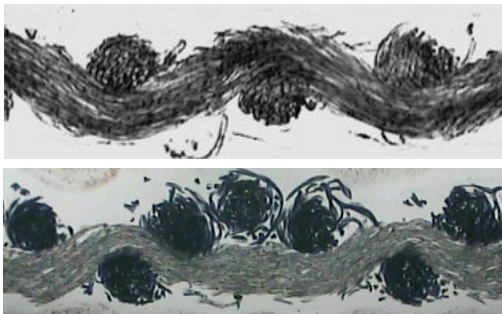


BASIC PARAMETERS OF WOVEN FABRIC

Set of ends and picks [/cm]

Definition of weave (dobby and jacquard construction)

- ✓ Plain weave
- ✓ Non-plain – float weave
- repeat of weave

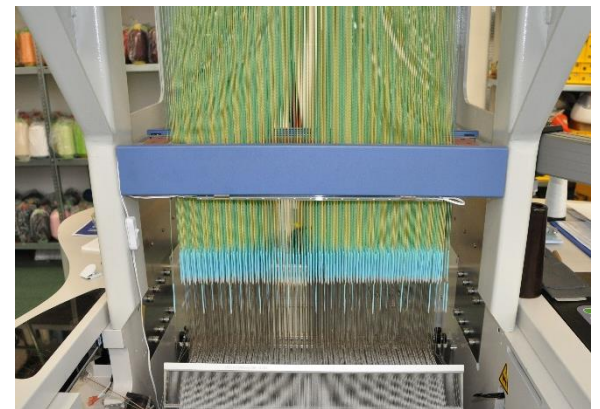
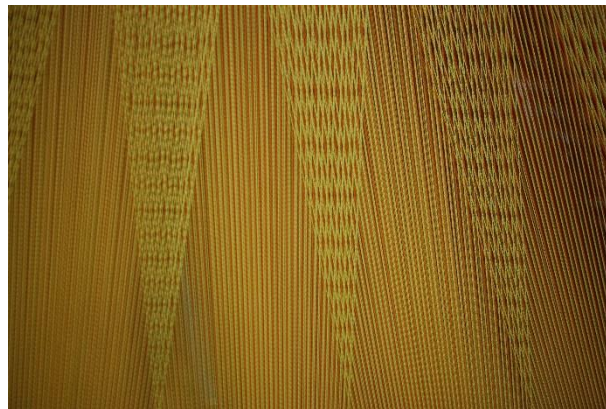


Basic Mechanism of weaving machine / shedding mechanism

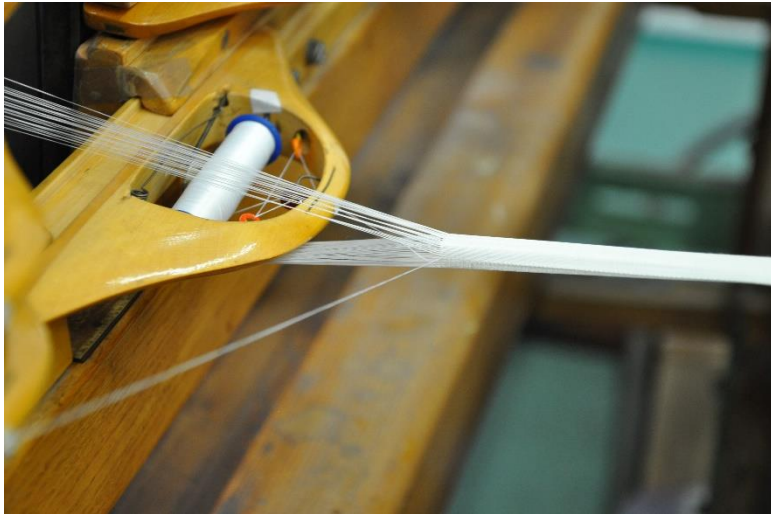


DEFINITION OF HARNESS

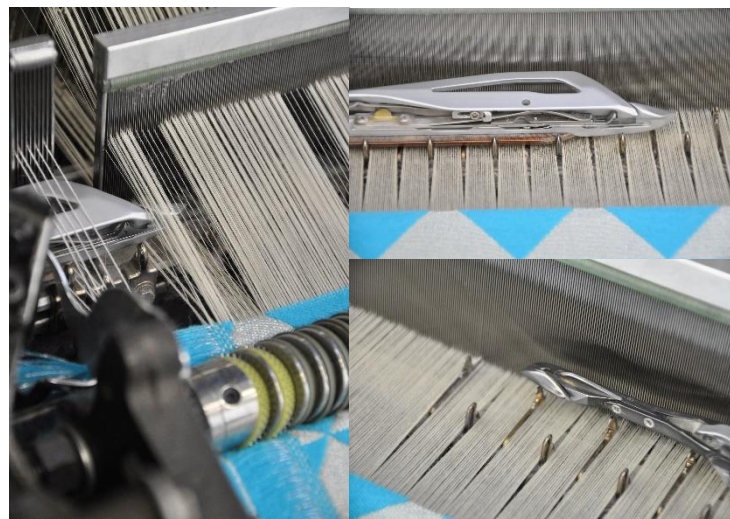
- ✓ HARNESS FRAME
- ✓ NUMBER OF HOOKS / HARNESS CORDS



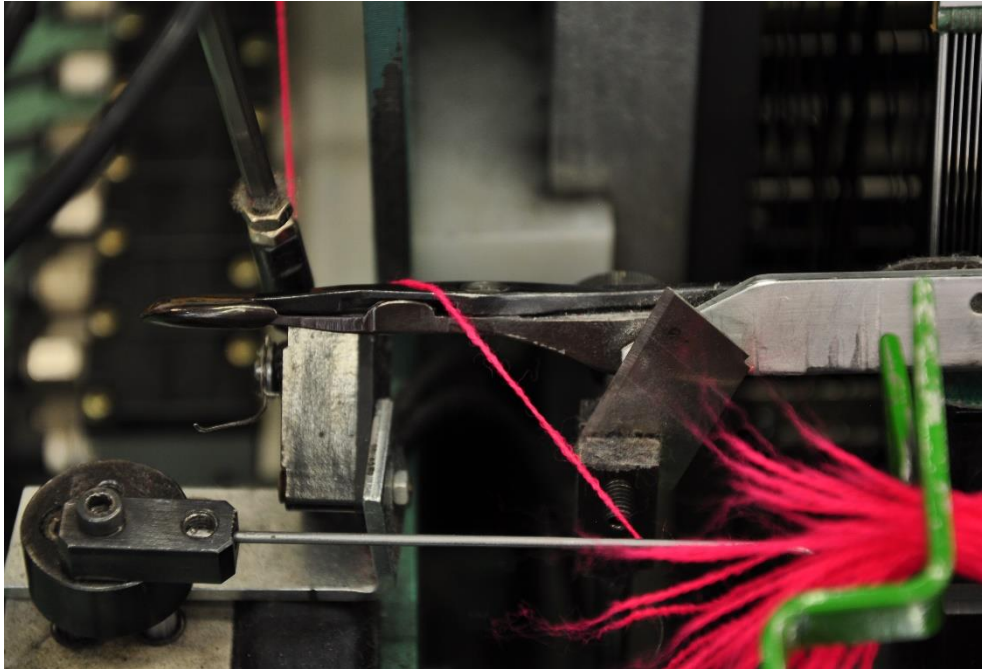
Basic Mechanism of weaving machine / insertion mechanism



- ✓ SHUTTLE WEAVING MACHINE
- ✓ SHUTTLESS WEAVING MACHINE
 - PROJECTILE
 - RAPIER
 - JET
 - AIR JET / WATER JET



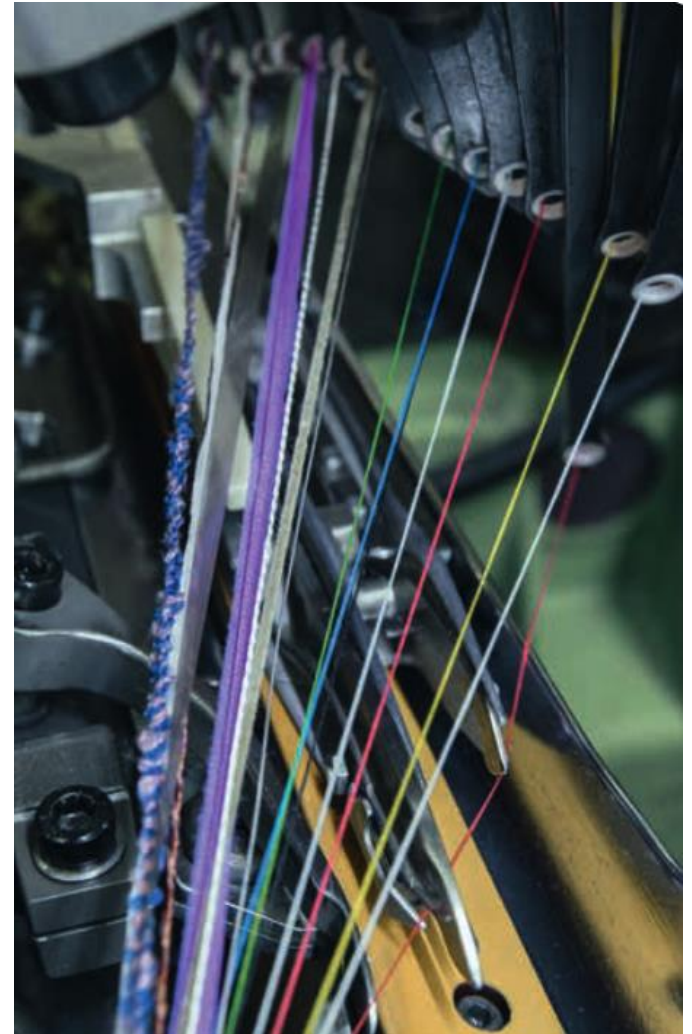
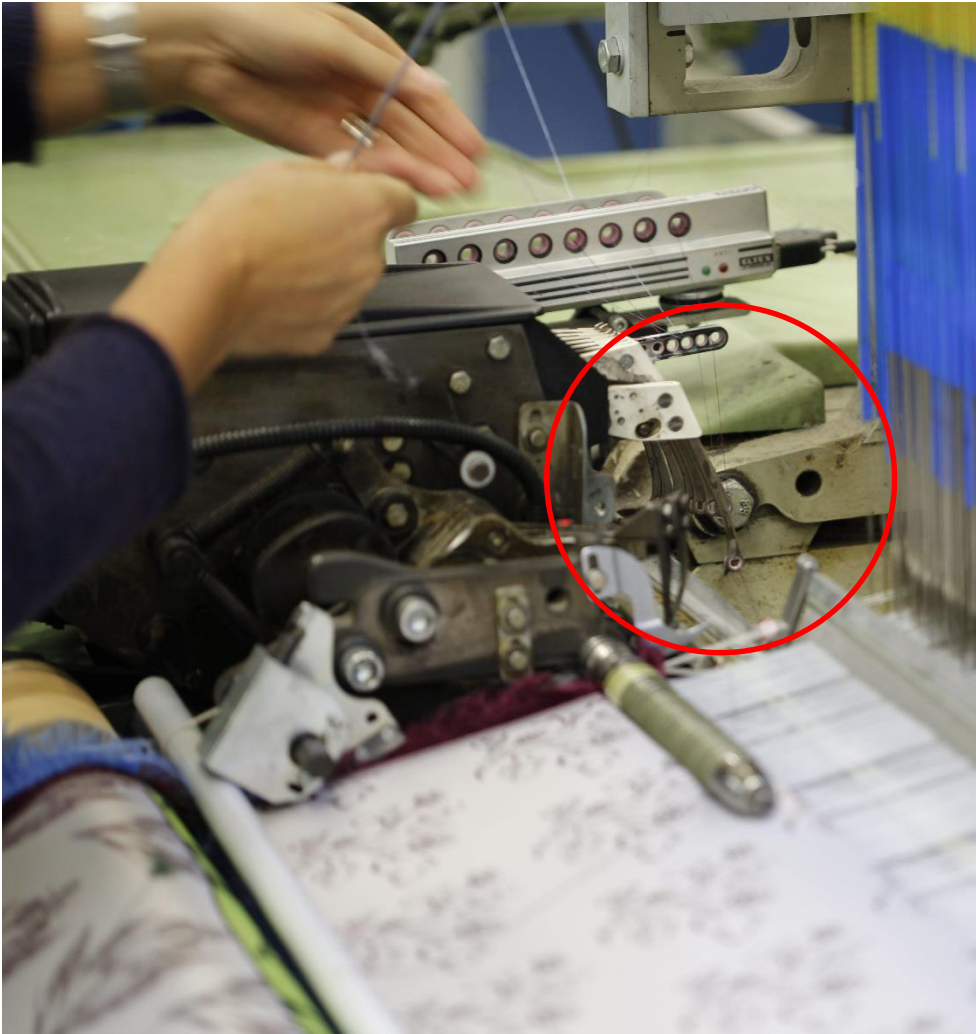
Basic Mechanism of weaving machine / insertion mechanism / shutless



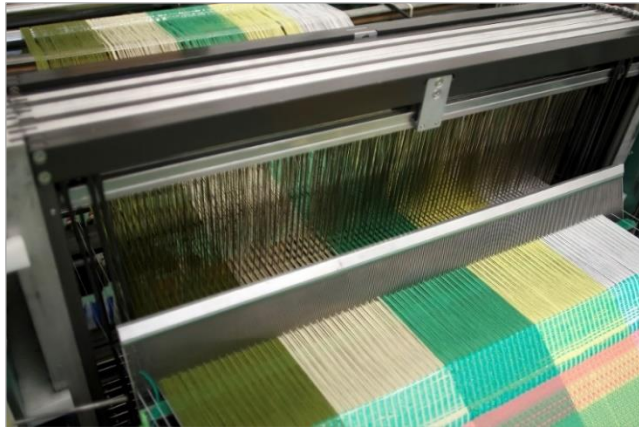
Basic Mechanism of weaving machine / insertion mechanism / shutless



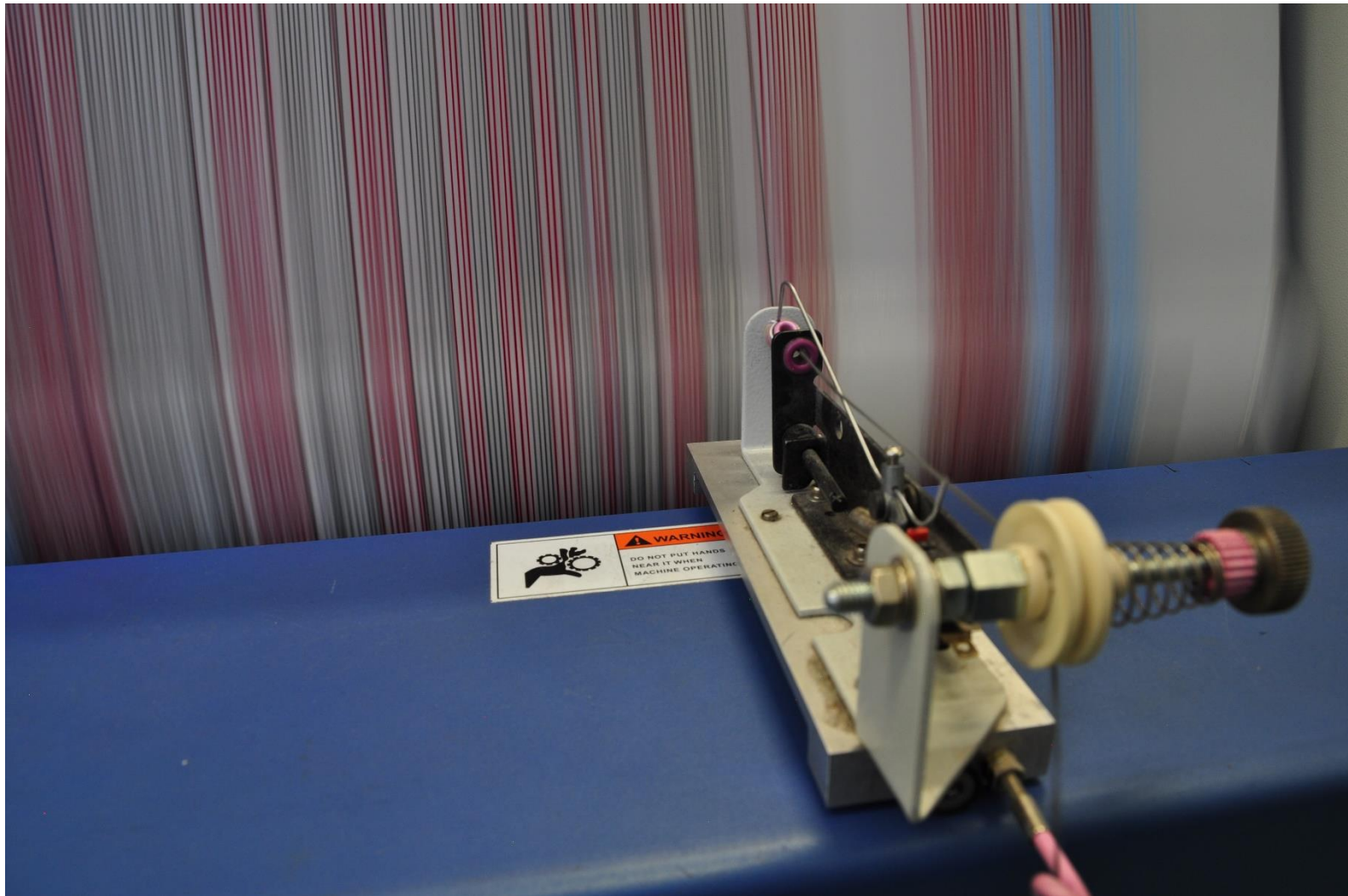
Basic Mechanism of weaving machine / mechanism of filling colours



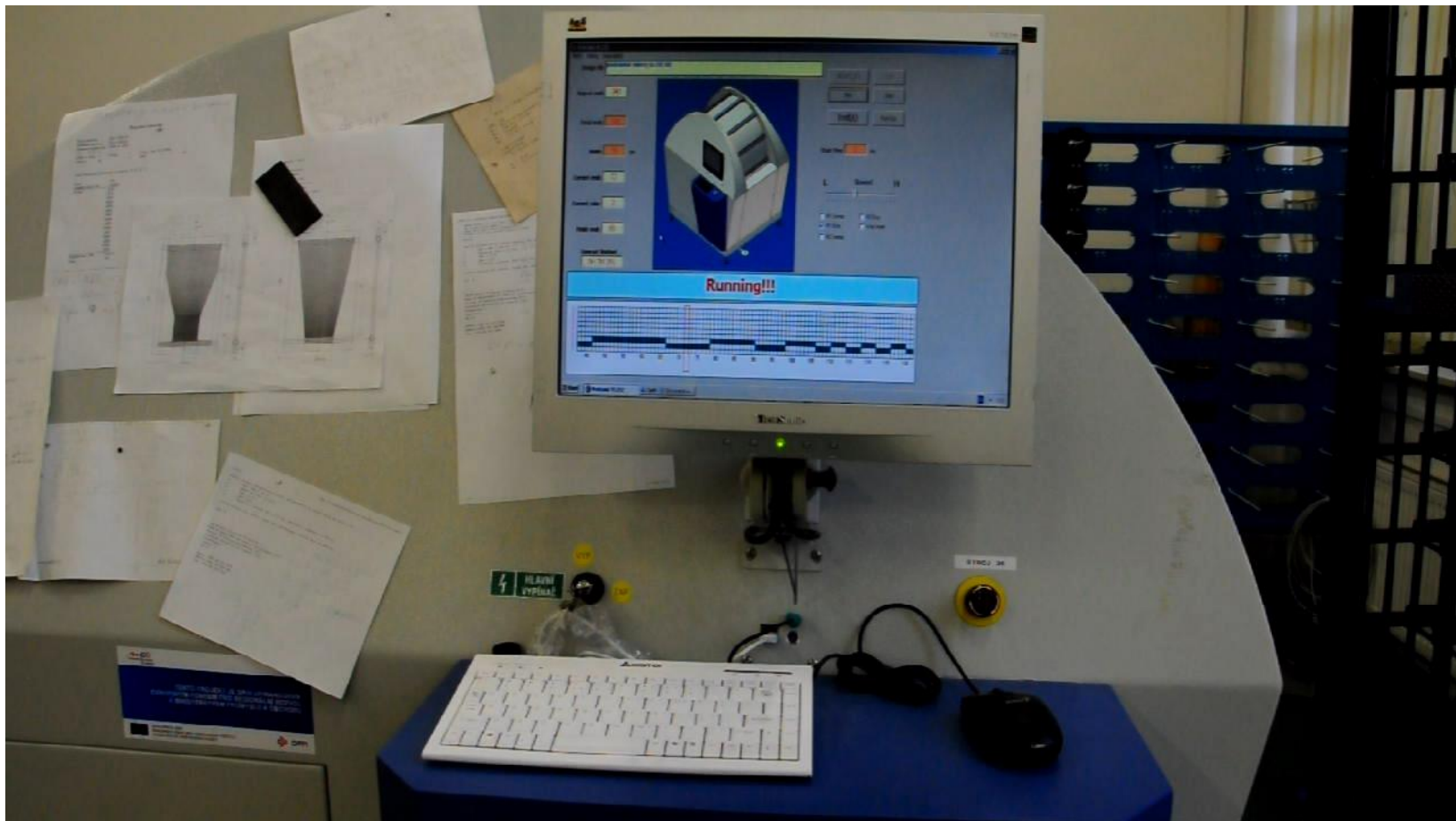
Preparation of warp and weft for weaving



Preparation of warp – WARPING, sizing, drawing-in/tying-in



Preparation of warp – WARPING, sizing, drawing-in/tying-in



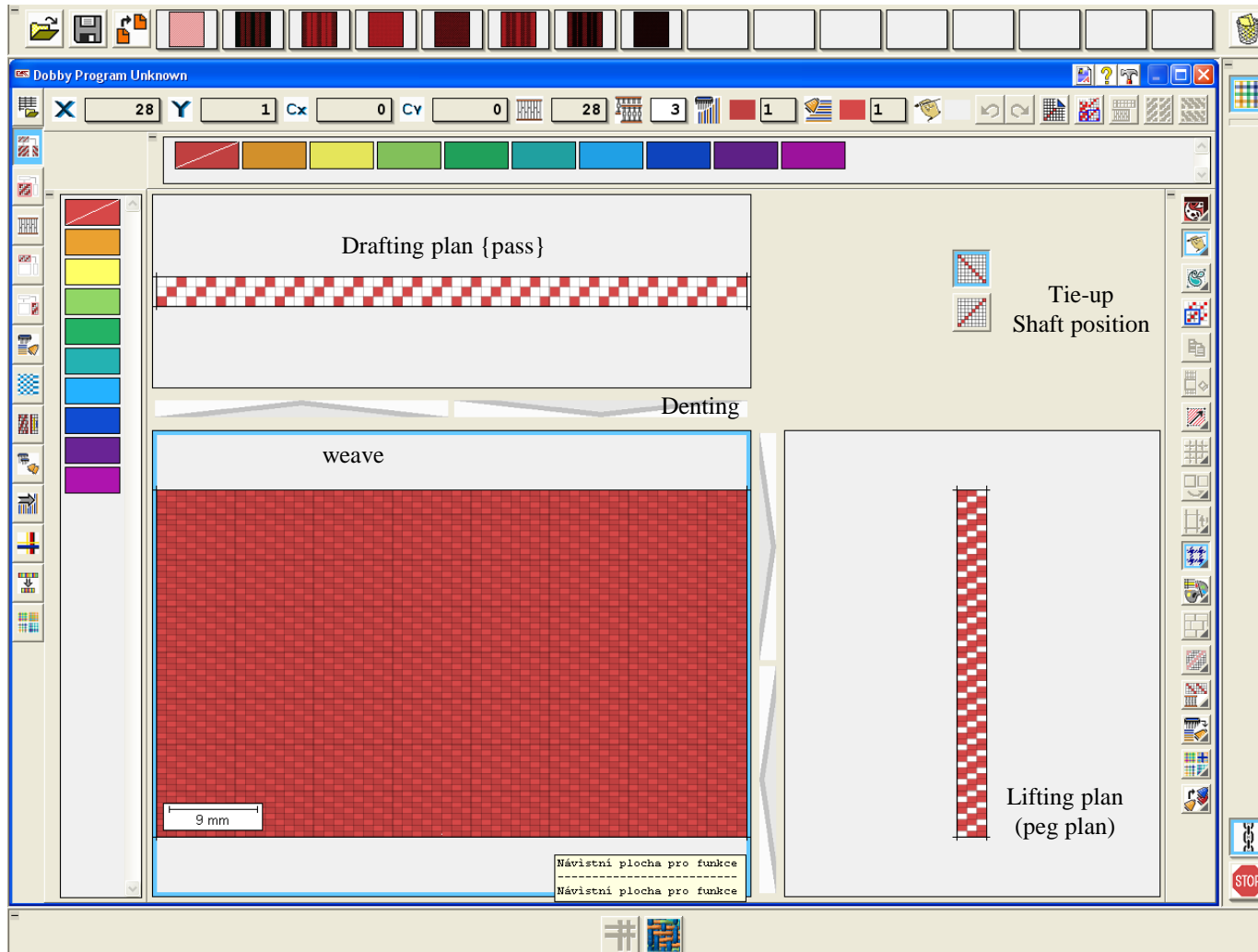
Preparation of warp – WARPING, sizing, drawing-in/tying-in



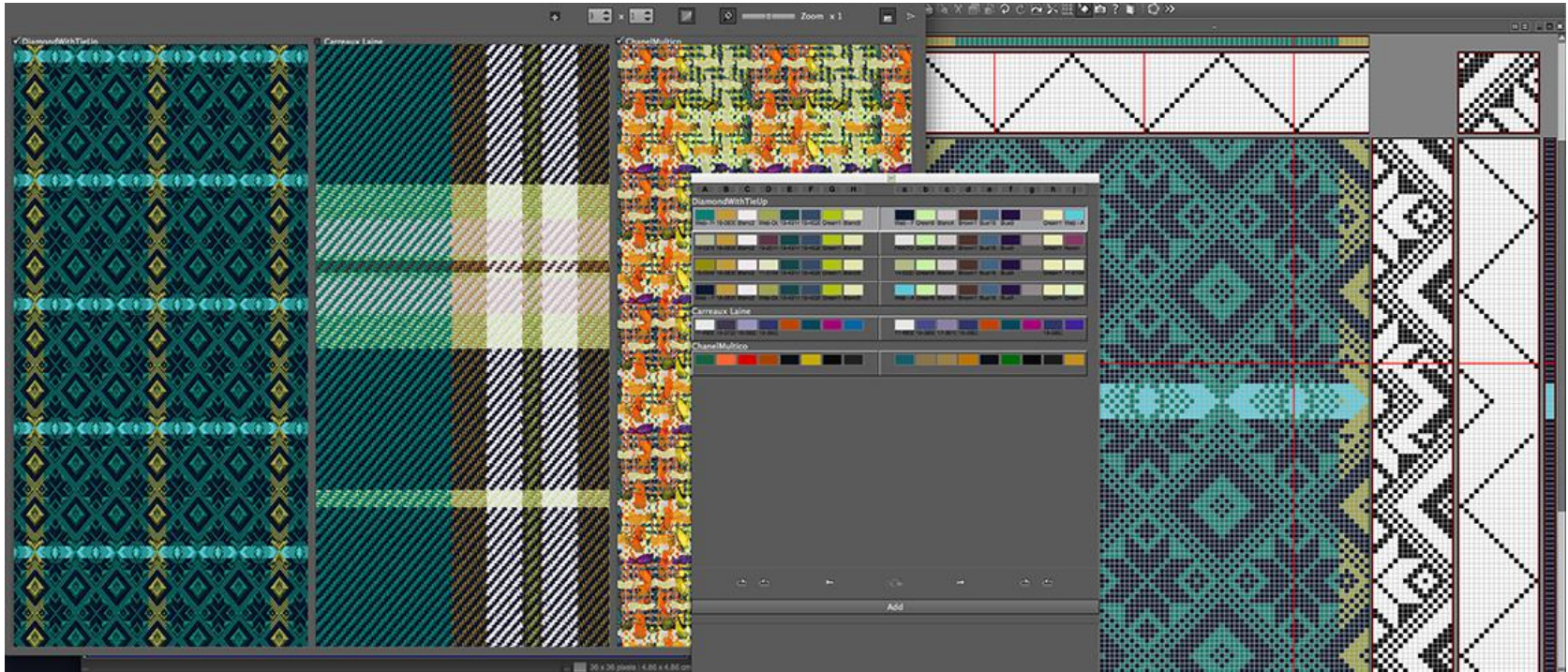
Preparation of pattern for weaving / dobby patterning



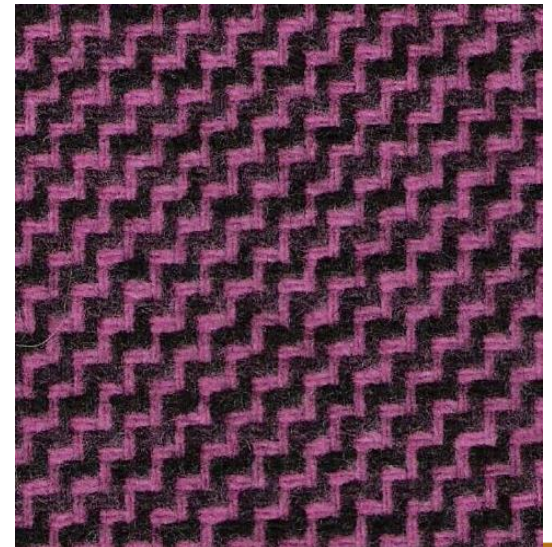
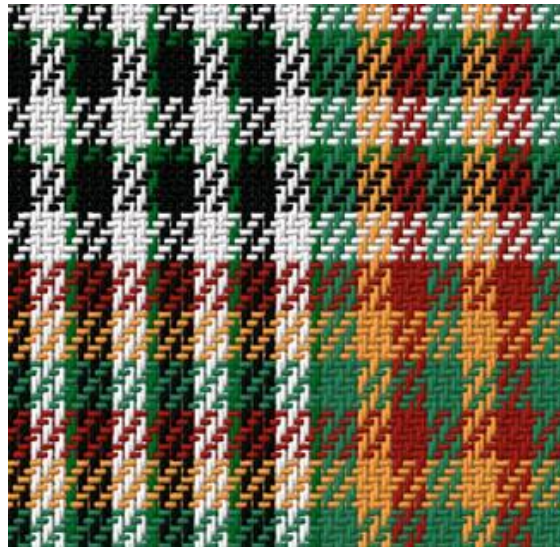
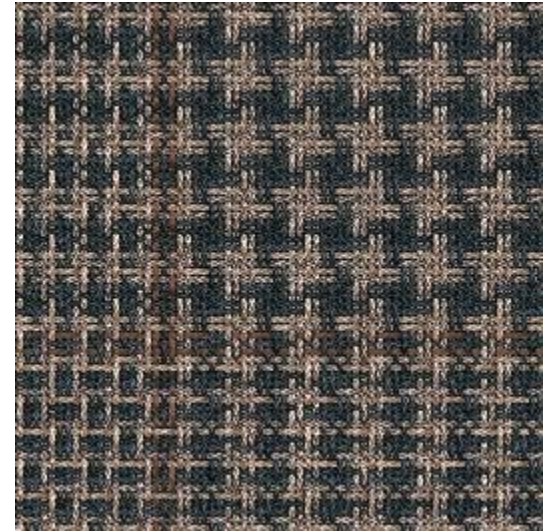
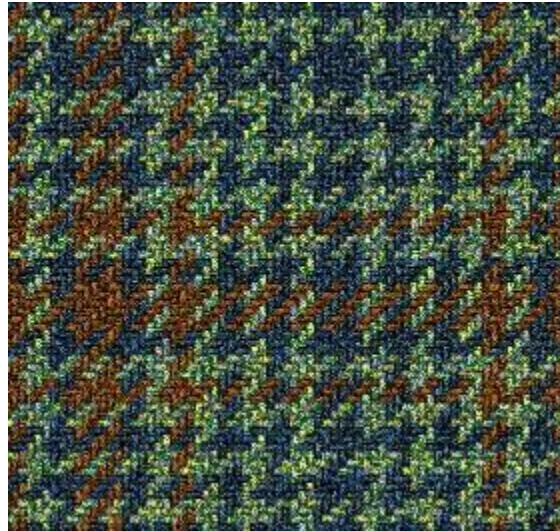
Preparation of pattern for weaving / dobby patterning



Preparation of pattern for weaving / doobby patterning



Preparation of pattern for weaving / dobby patterning



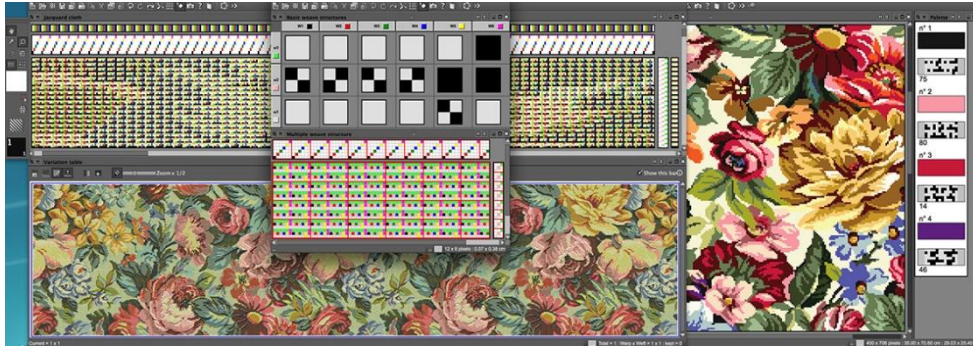
Preparation of pattern for weaving / jacquard patterning



Preparation of pattern for weaving / jacquard patterning

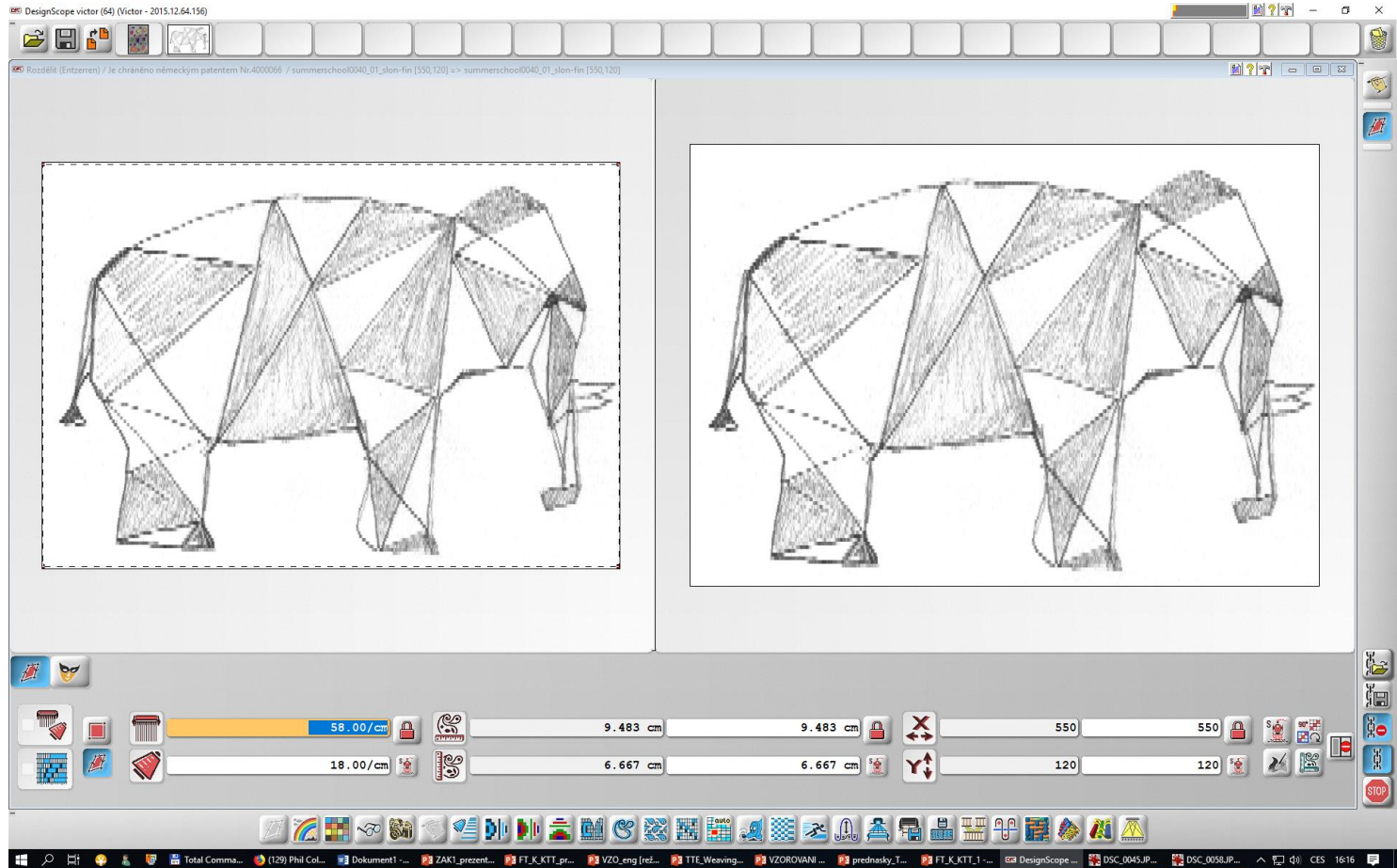


Preparation of pattern for weaving / jacquard patterning



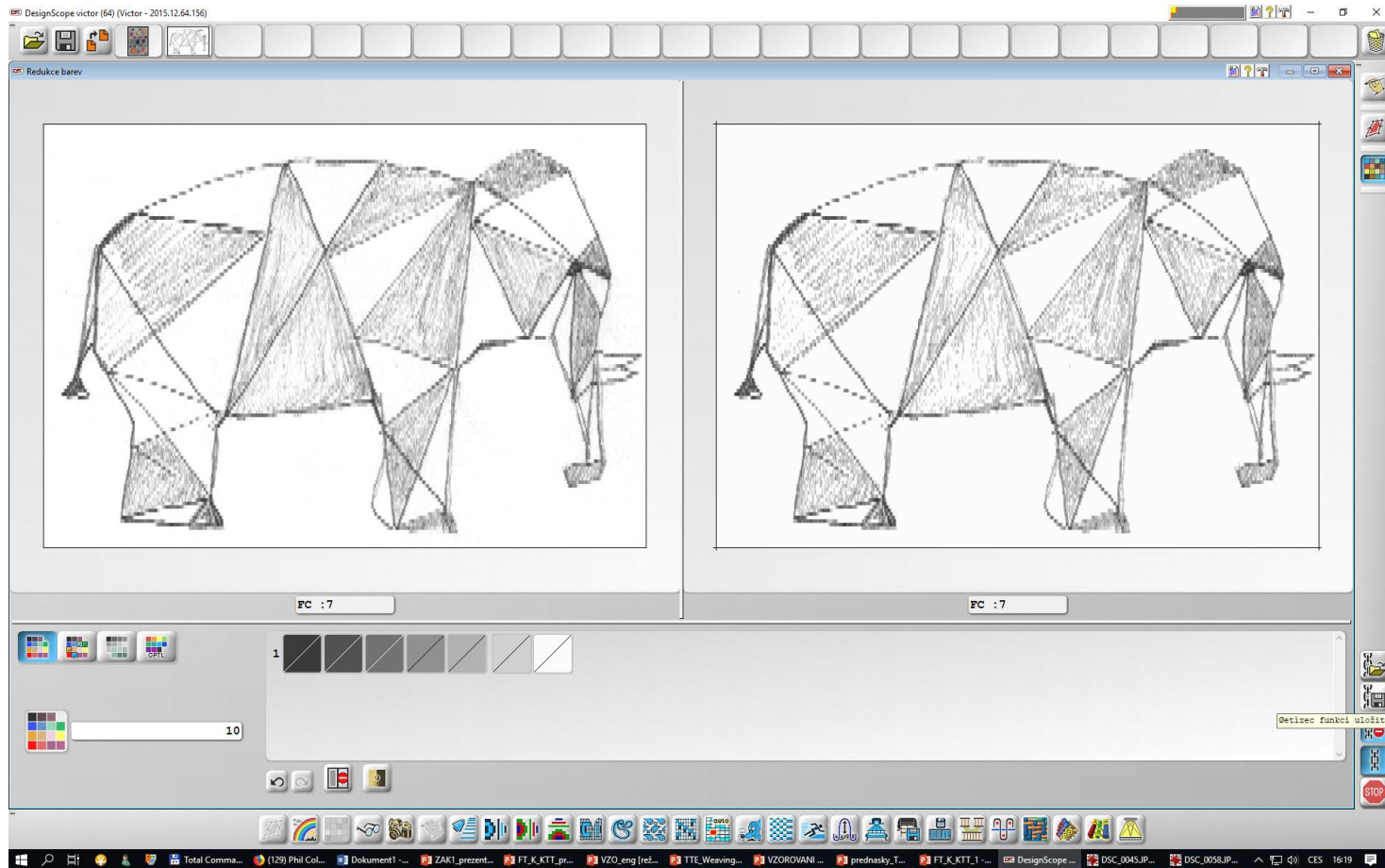
Preparation of pattern for weaving / jacquard patterning

✓ DEFINITION OF INPUT PARAMETERS OF FABRIC + MACHINE



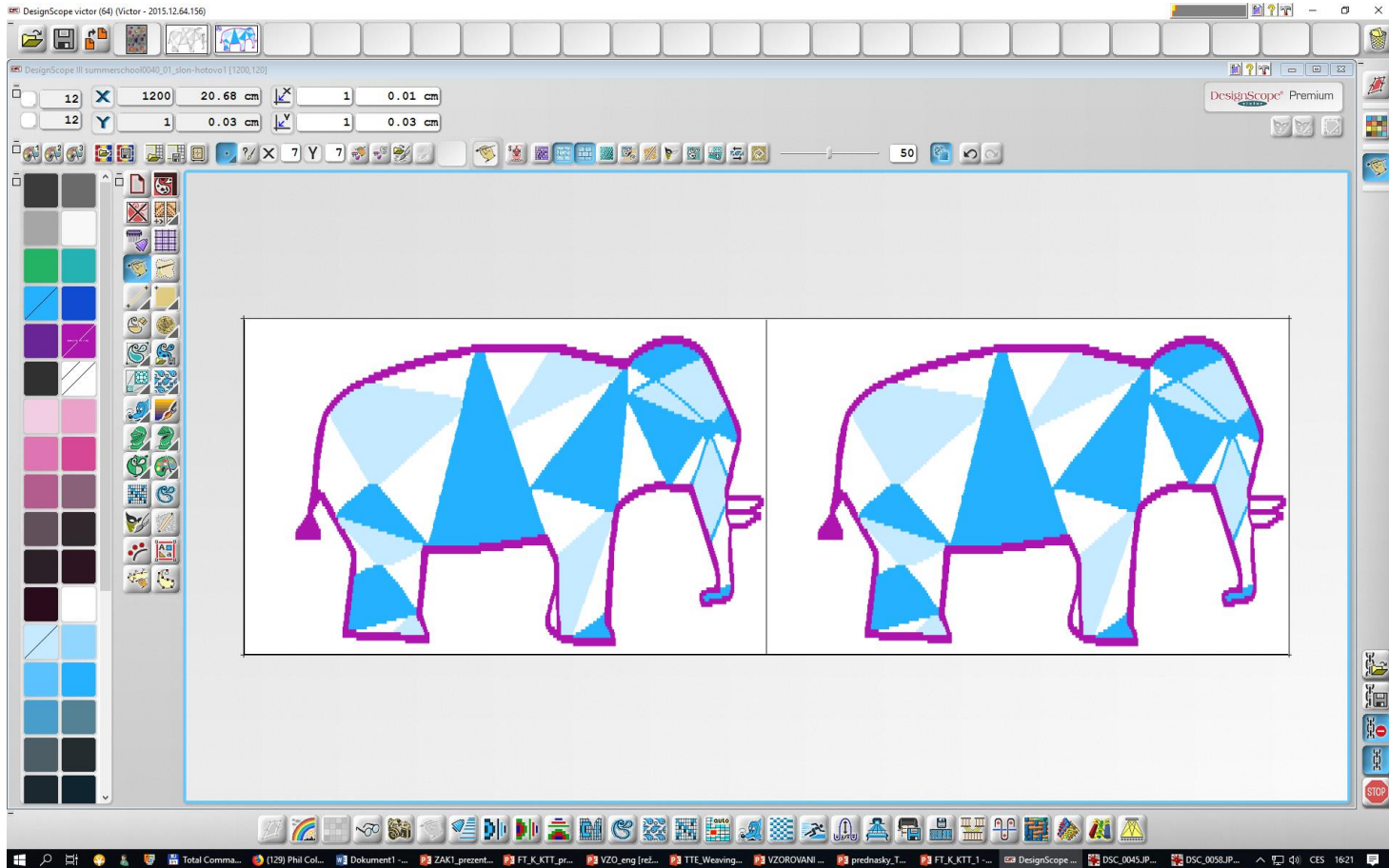
Preparation of pattern for weaving / jacquard patterning

✓ REDUCTION OF COLOURS IN COLOUR DESIGN



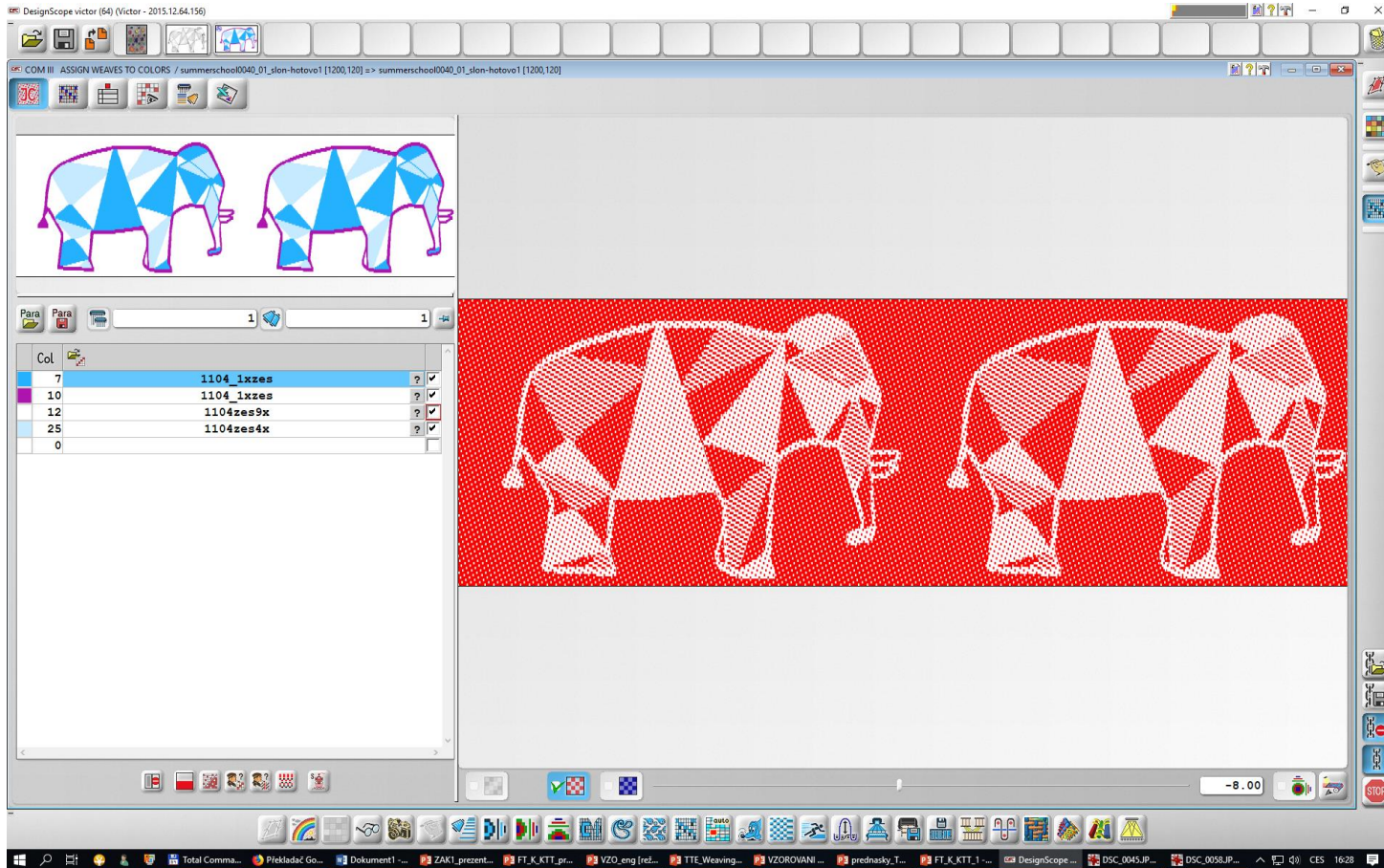
Preparation of pattern for weaving / jacquard patterning

✓ KORECTION OF COLOUR DESIGN



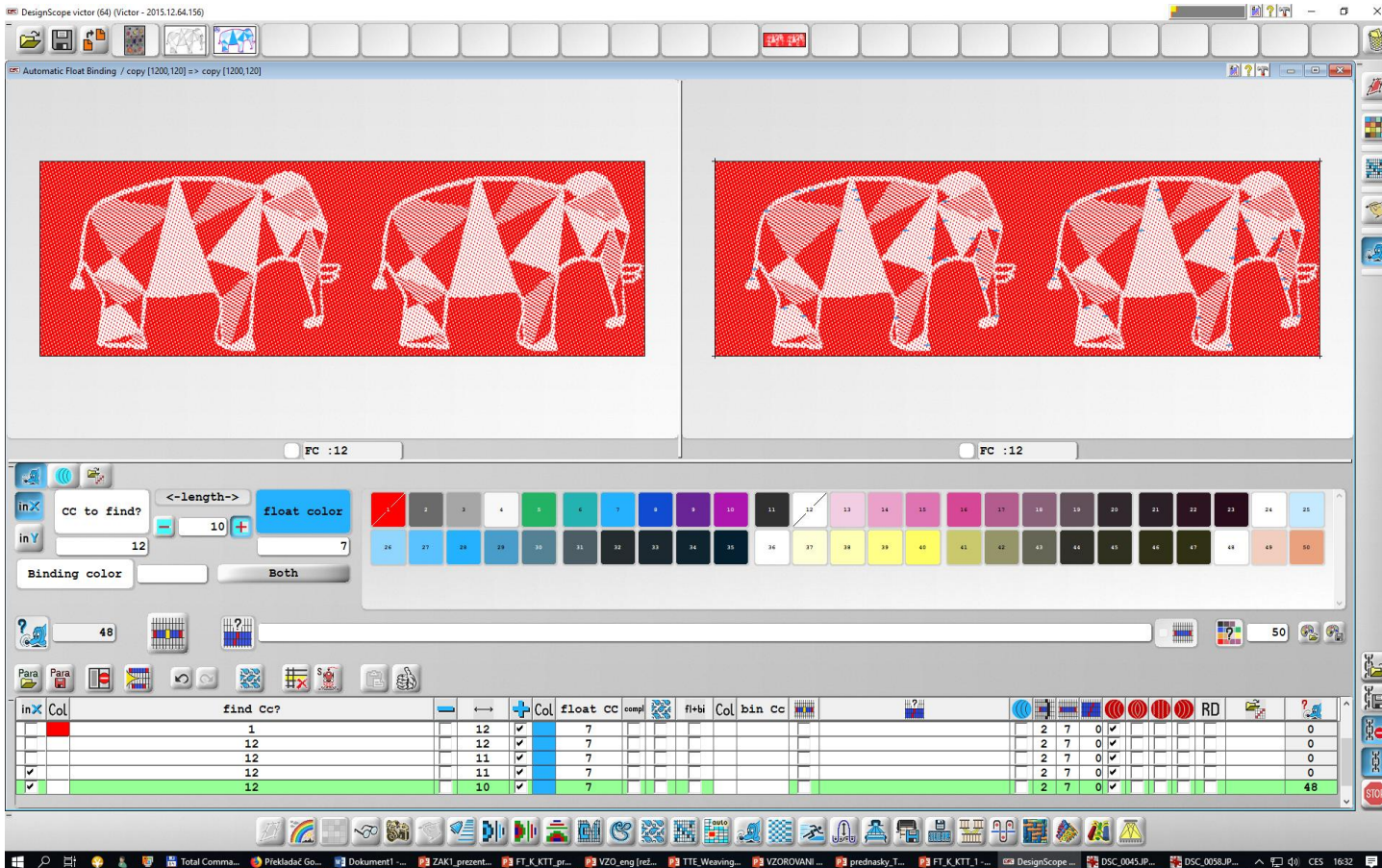
Preparation of pattern for weaving / jacquard patterning

✓ ASSIGN WEAVES TO COLOURS TO COLOUR DESIGN



Preparation of pattern for weaving / jacquard patterning

✓ CORECTION OF PATTERN DESIGN / FLOAT



The screenshot displays the DesignScope software interface. At the top, the window title is "DesignScope victor (64) (Victor - 2015.12.64.156)". Below the title bar, the menu bar shows "Automatic Float Binding / copy [1200,120] => copy [1200,120]". The main workspace is divided into two panels, each showing a red elephant pattern with white geometric shapes. Below the workspace, there are two control panels for "FC : 12".

The left control panel includes:

- Buttons for "in X" and "in V" with a "cc to find?" field set to 10 and a "float color" field set to 7.
- A "Binding color" dropdown set to "Both".
- A "Para" dropdown set to "Para".
- A "48" field and a "50" field.

The right control panel includes a color palette with 50 numbered color swatches.

At the bottom, there is a data table with columns: in X, Col, find Cc?, float, CC, compl, fl+bi, Col, bin, Cc, RD, and a final column with values 0, 0, 0, 0, 48. The table contains 5 rows of data.

in X	Col	find Cc?	float	CC	compl	fl+bi	Col	bin	Cc	RD	
		1	12	7				2	7	0	0
		12	12	7				2	7	0	0
		12	11	7				2	7	0	0
✓		12	11	7				2	7	0	0
✓		12	10	7				2	7	0	48

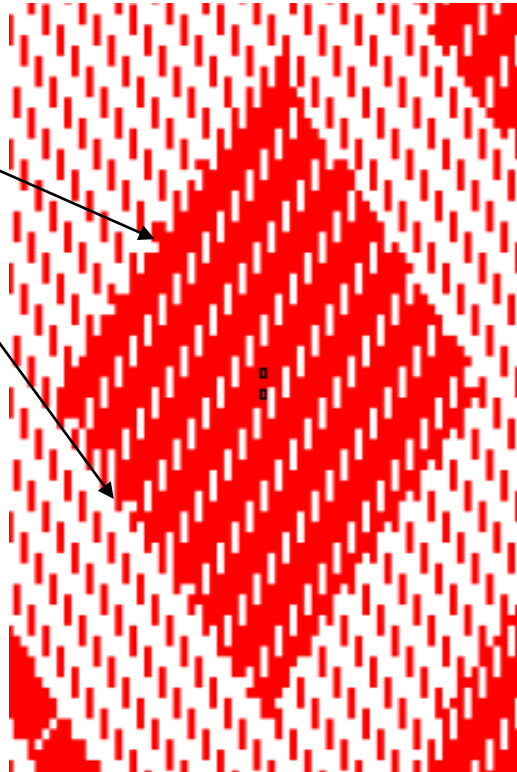
The Windows taskbar at the bottom shows several open applications, including "Total Comma...", "Překladč Go...", "Dokument1...", "ZAK1_prezent...", "FT_K_KTT_pr...", "VZO_eng [ret...", "TTE_Weaving...", "VZOROVANI...", "prednasky_T...", "FT_K_KTT_1...", "DesignScope...", "DSC_0045.JP...", "DSC_0056.JP...", and "CES 16:32".



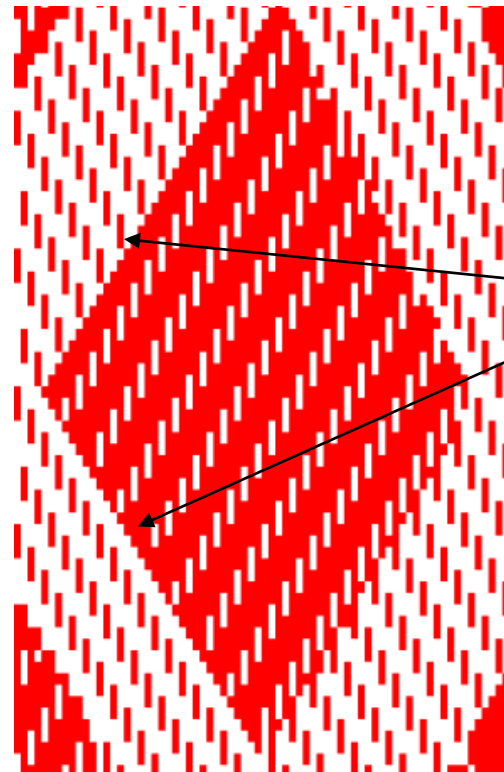
Preparation of pattern for weaving / jacquard patterning

✓ CORECTION OF PATTERN DESIGN / CONTOURS

BEFORE



AFTER



Preparation of pattern for weaving / jacquard patterning

✓ WEAVING FIRST SEMPLE OF WOVEN FABRIC / FINAL



Preparation of pattern for weaving / jacquard patterning

✓ WEAVING FIRST SEMPLE OF WOVEN FABRIC / FINAL WEAVING



Brigita Kolčavová Sirková
Head of Department of
Technologies and Structures

brigita.kolcavova@tul.cz

