

The logo for Cyaltech group features a large, dark blue, stylized letter 'C' on the left. To the right of the 'C', the word 'valtech' is written in a bold, dark blue, sans-serif font. Below 'valtech', the word 'group' is written in the same font style but in a smaller size.

**C**valtech  
group

**Driven by  
value creating  
technology.**



# CARPET HANKS DYEING



Callebaut de Blicquy designs and produces complete units for bleaching and dyeing any type of fiber or application including raw material, tow, bumps, bobbins and hanks.

CDB has a long history and massive experience with the carpet industry.

## Common process flow for dyeing of hanks:

- |                   |  |
|-------------------|--|
| 1/ Laboratory     | from analyzing to defining the dyeing “recipe” |
| 2/ Hanks Scouring | washing / preparation before dyeing            |
| 3/ Dyeing         | the core process                               |
| 4/ Centrifuge     | dewatering                                     |
| 5/ Drying         | drying of the hanks                            |

After drying, the hanks are ready to proceed to the following step

➔ Hanks to bobbins ➔ Carpet production

CDB is able to provide you with all equipment from the laboratory until the drying process.



Blanc hanks



Dyed hanks



LABORATORY

## Lab testing and refining of dye process

- To reduce productions costs (water / time / chemicals)
- To be **Right First Time** (to respect delivery time & improve efficiency)
- To improve quality and customer satisfaction



*Example of lab machines with operating panels on the left*



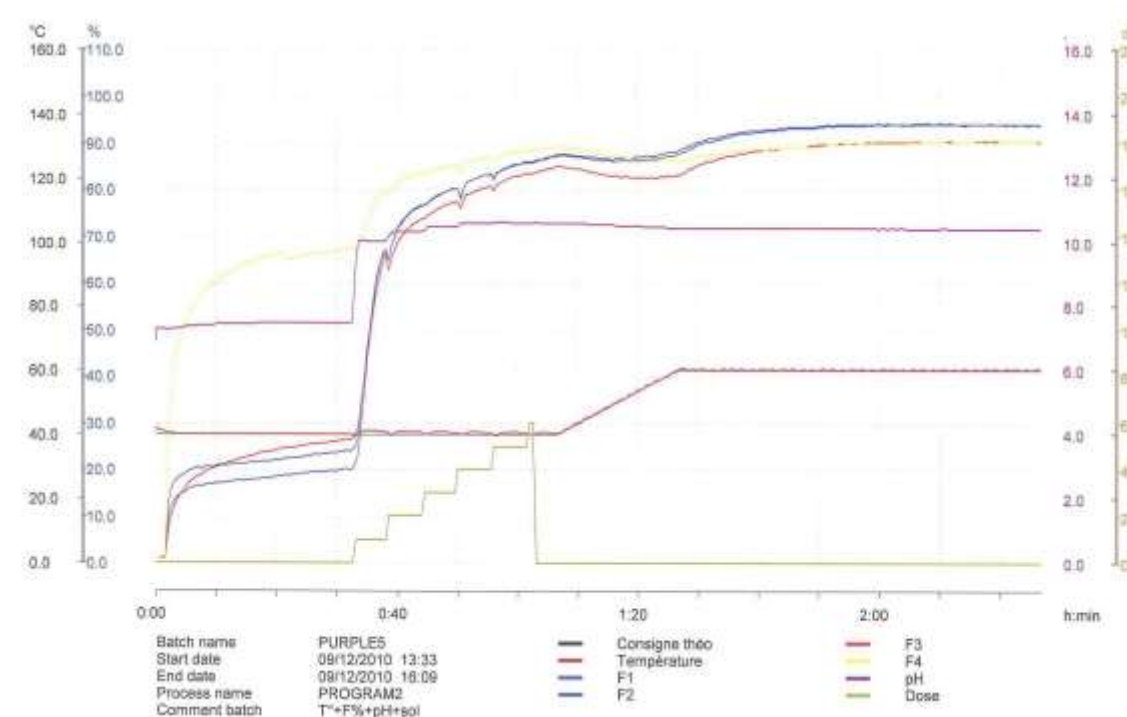
## Optilab by CDB with ADM data analysis

- To control the dyeing parameters (water, material, chemicals, kinetic exhaustion, etc.)
- To secure the reproducibility between laboratory and production
- To reduce the redye & redye in production
- To reduce pollution
- To Increase productivity

➔ See also this [video](#) on Youtube



Example of ADM lab testing machine



Example of output graph ready for detailed analysis





HANKS SCOURING

## Scouring of hanks before dyeing

- removal of grease, dirt, sweat and other impurities through washing, cleaning, rinsing.
- result = clean wool hanks ready for dyeing



*View on infeed of hank scouring line*



## Scouring of hanks before dyeing

- At the output of the scouring line, the hanks are placed directly into boxes.
- These boxes are now ready to go to the dyeing process



*View on filled boxes at the output of the hanks scouring line*



DYEING

## Introduction to dyeing of yarn in hanks:

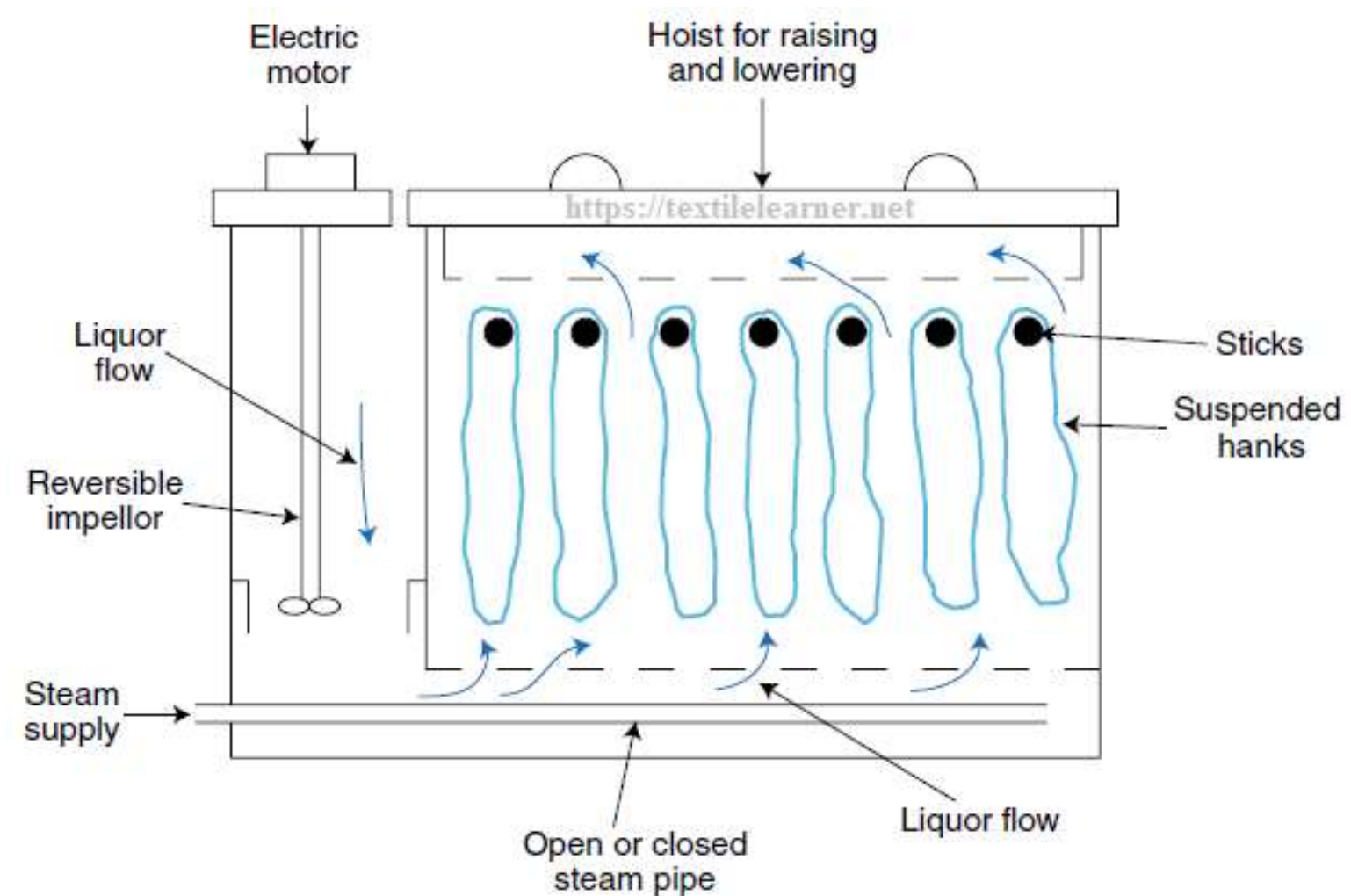
- less common technology compared to package dyeing but,
- superior colour penetration
- softer feel of the yarns after dyeing
- ideal for carpet industry



## Different types of hank dyeing equipment:

### Hussong type

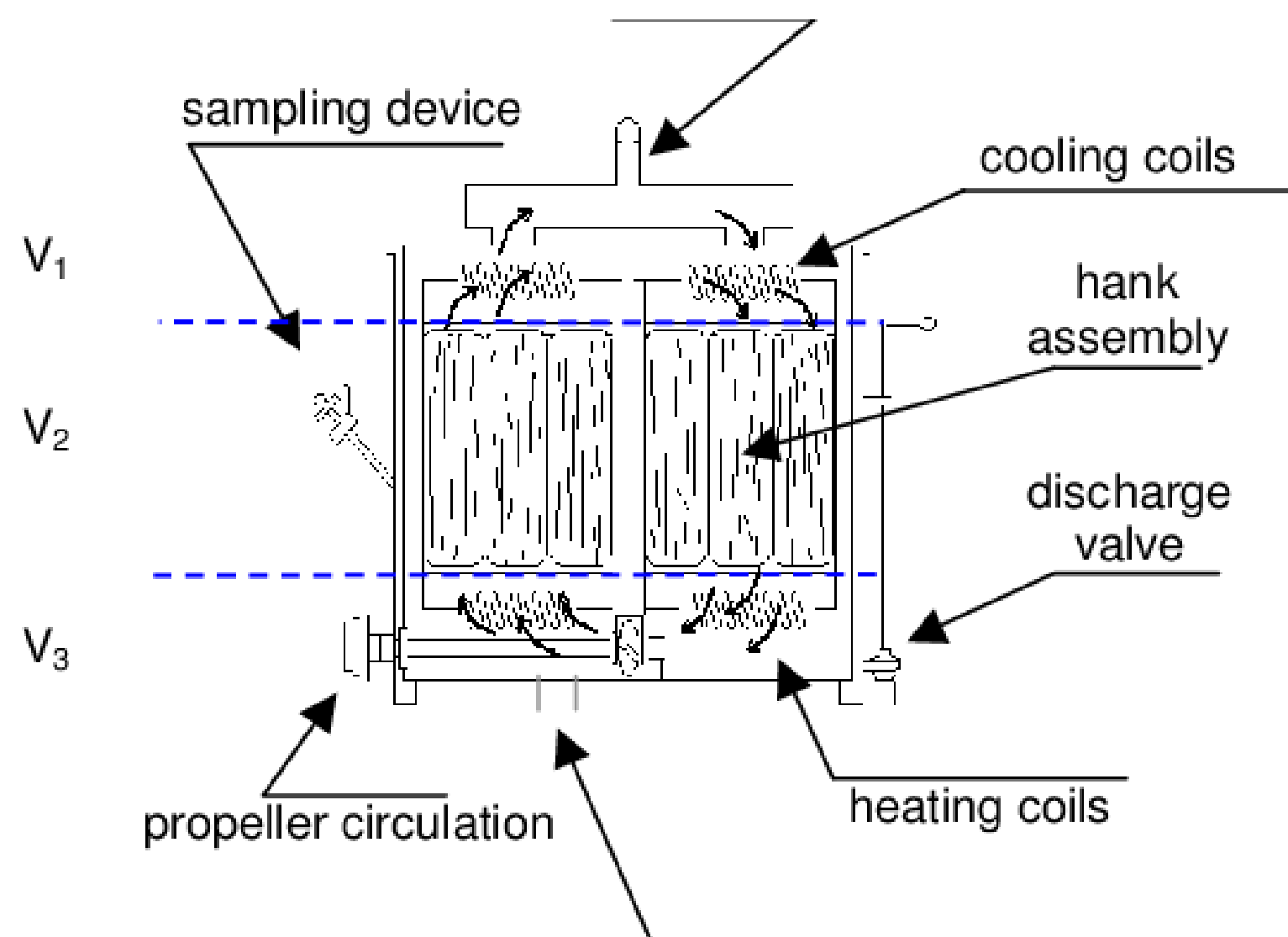
- hanks suspended on V-shaped sticks with perforations
- heating at the bottom / liquor flow from bottom upward
- 10 to 15kg per stick
- technology as used by CDB



## Different types of hank dyeing equipment:

### Cabinet type

- specifically designed for delicate yarns (knitwear)
- hanks held at the top and at the bottom
- 3,5 to 4kg per stick
- only suited for light hanks (<1kg)



## Different types of hank dyeing equipment:

### Spray dyeing

- suitable for very delicate yarns (such as silk)
- hanks are placed on rotating arms above a recirculation bath with heating element





## Conventional loading of hanks

- old technology, no longer used by CDB
  - labor intensive & unsafe
  - wet jumbo hanks can weigh up to 15kg each



*Operators need to attach the hanks from the bottom side onto the carrier for loading and remove the wet (& heavy) hanks after the dyeing process in the opposite way*



## CDB hank loading

- hanks can be loaded by the operators at an easily accessible height
- loading into a series of modular boxes
- the boxes can be moved with a forklift to the dyehouse
- in the dyehouse the boxes are picked up by the cover
- with an overhead crane the hanks are moved towards the dyeing vessel
- high capacity loading safe & easy!
- the hanks are lifted above the dyeing vessel and lowered into the vessel in a matter of minutes



Loaded boxes coming from scouring line



## CDB hank loading

- after the dyeing process, the hanks can be lifted out of the vessel in one operation



- easy unloading onto the box carriers

- lifting and removing of the cover is the final step



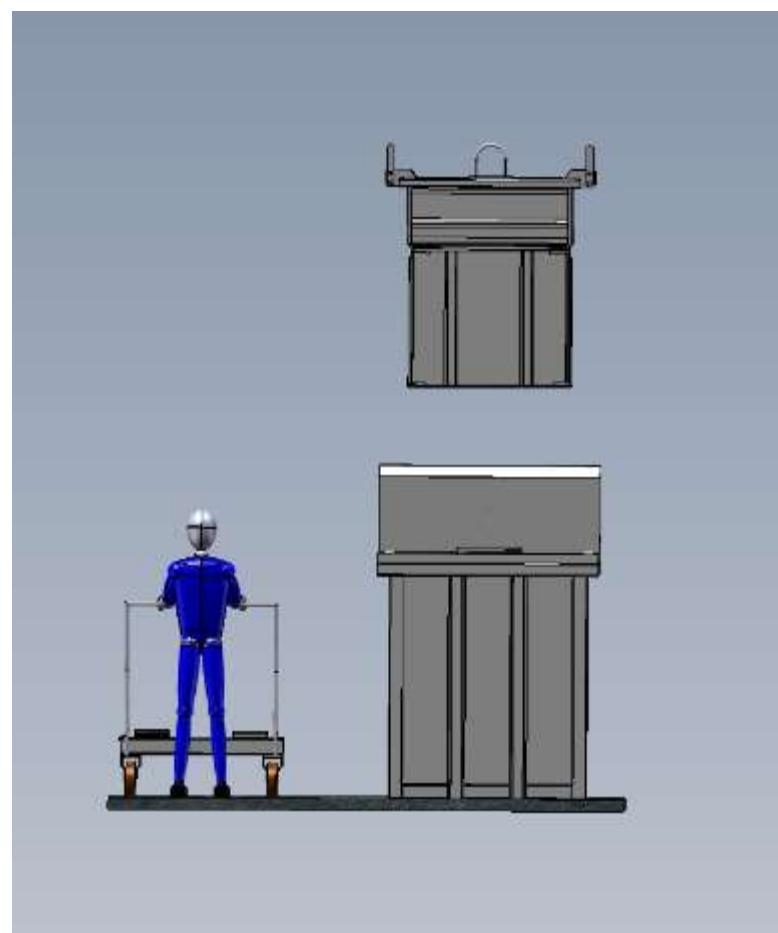
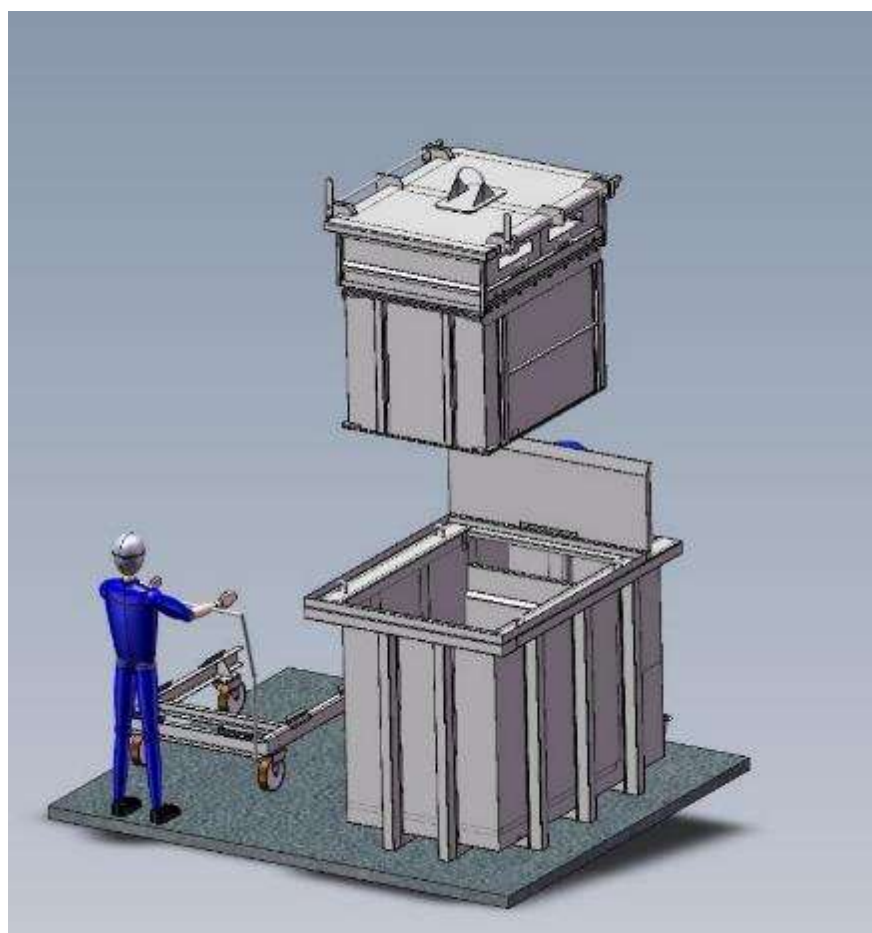
- hanks are ready

- the boxes with dyed hanks are now ready for removal by a forklift towards the following step (centrifuge)



## Callebaut de Blicquy Hank Dyeing

- simplified loading & unloading, less manual actions necessary
- easy operation & ergonomic design
- high capacities possible → dyeing batches up to 5000kg
- suited for jumbo hanks (of 3 to 5kg)



Example of 128kg/batch dyeing system



## Callebaut de Blicquy Hank Dyeing

- Less water, less chemicals, less steam, etc. = lower cost
- Increased homogeneity → better quality



Example of 1037kg/batch dyeing system



DEWATERING

## Dewatering by Centrifuge

After the dyeing process, the hanks go to a centrifuge

- the operator takes the hanks from the boxes and places them in a container with a net
- when the container is full, the net is lifted from the container and placed in the centrifuge
- after the centrifuge process, the net is lifted out and transported to the dryer



*Example of net with hanks*



*Net in transport towards container*



*View of containers filled with hanks*



DRYING



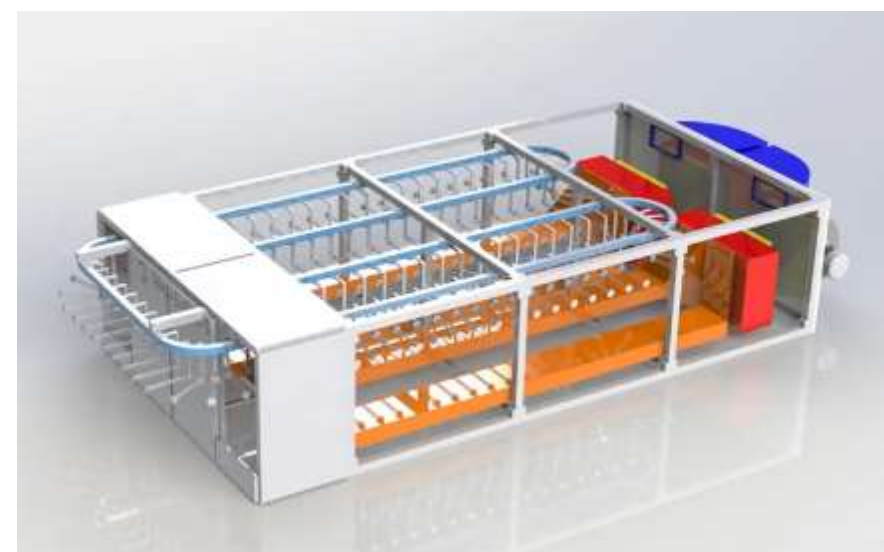
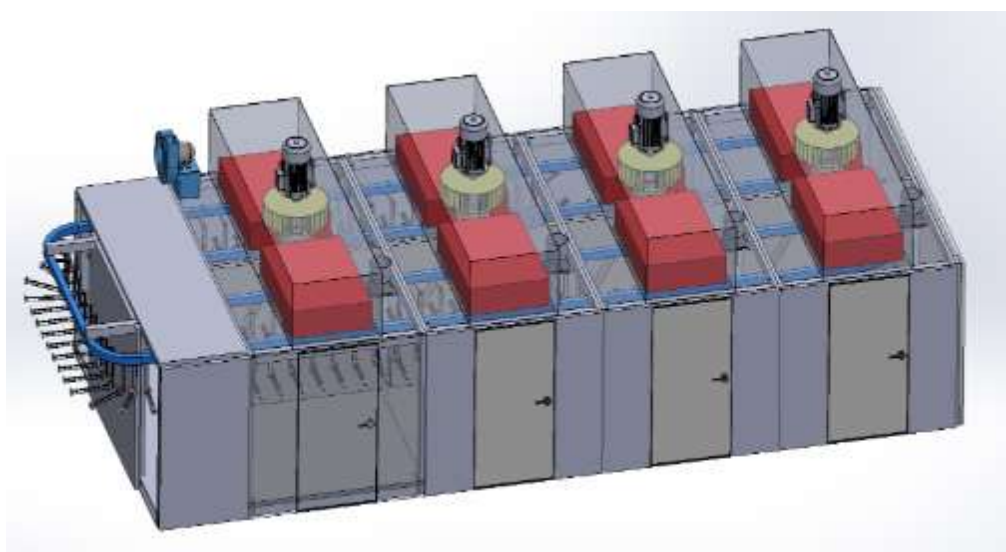
## Drying

- the centrifuged hanks are mounted onto the dryer reels by the operators
- the hanks then pass through the dryer
- at the exit of the dryer, the operators remove them from the reels



The hanks are now ready to be transferred onto bobbins and followingly towards the

## Axminster carpet production process





Check also our [video](#) about hanks dyeing on  **YouTube**

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Cvaltech  
group