



FAST DYE LEVELEN PROCESS

The greatest innovation
of the 21st Century for
Polyester Dyeing



FAST DYE LEVELEN PROCESS

modernizes the conventional dyeing of polyester fibers obtaining an ecologically revolutionary process with reductions in dyeing time, energy and water consumption.

This process takes place with the synergic use of **LEVELEN F-DYE** in combination with **LEVELEN PES** needing no additional products to start with the dyeing process.

LEVELEN F-DYE is a specific leveling and dispersing agent for disperse dyes.

LEVELEN PES is a multi-function product that acts as emulsifier, anti-crease agent and pH buffer.

LEVELEN F-DYE and **LEVELEN PES** are eco-friendly products that do not contain any type of carrier.



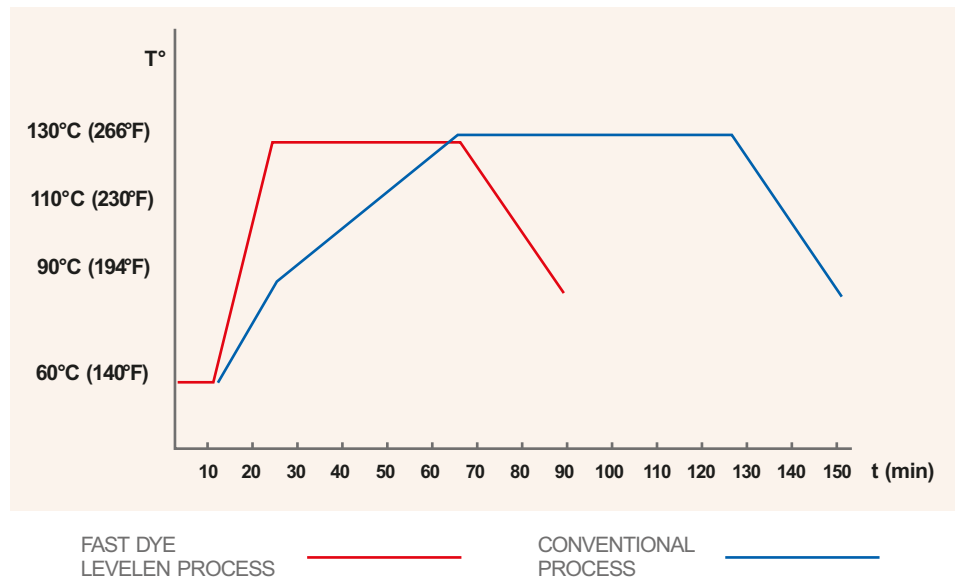
Energy Saving :

water reduction
and total
process time
reduction

FAST DYE LEVELEN PROCESS



- **Time saving:** Heating from 70°C (158°F) to 130°C (266°F) in 12 minutes (5°C or 9°F/min gradient) with a saving of 60 – 70 minutes in the total dyeing time.

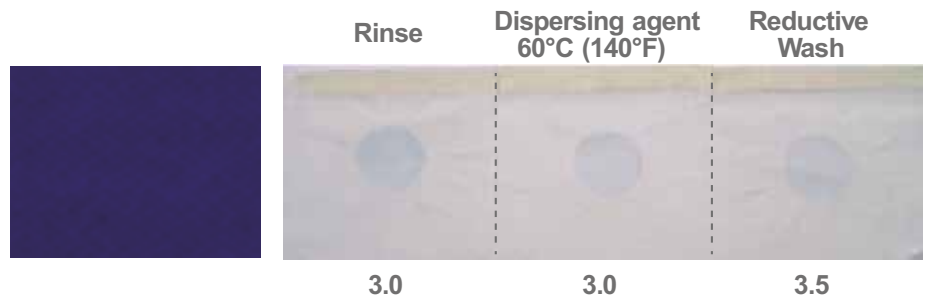


- **Pre-scouring for less time and at lower temperature:** thus achieving a saving of total dyeing time and amount of water used.
- **Energy saving:** is the result of the time saved in heating the dye bath.
- **Cost reduction in effluent treatment:** discharge baths are practically exhausted and colorless, with a lower COD (Chemical Oxygen Demand) and BOD (Biochemical Oxygen Demand) for the composite process.
- The dispersing properties of LEVELEN F-DYE that prevent the agglomeration of the dye help in many cases with eliminating a reductive wash or achieving acceptable colorfastness results with a simple wash.

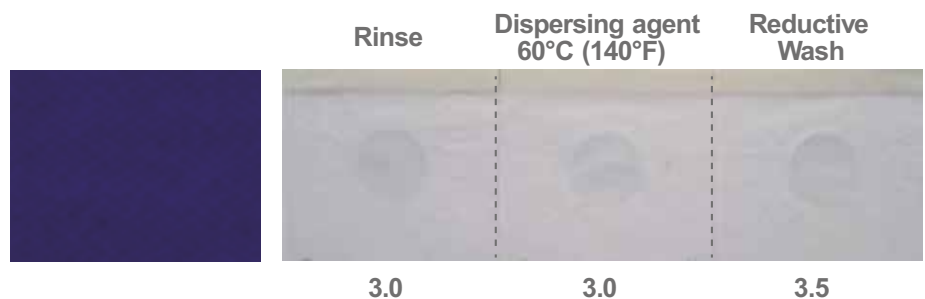


- COLORFASTNESS TO CROCKING – AATCC 8

DRY CROCKING



WET CROCKING



- **Improved colorfastness to crocking:** is achieved because a shorter dyeing time reduces the possibility of creating agglomerations that could stick to the outer surface of the fiber, due to dye dispersion instability.
- **Reduction of oligomer production:** the shorter dyeing time does not give internal oligomers of the fiber enough time to emerge, with a consequent shorter washing frequency of the machines and better quality of the material that does not show the characteristic dust and an increase in finished product yield up to 1%, as factory experience demonstrates.
- Possibility to reuse dye baths for medium and dark shades, representing additional water and chemicals savings.
- Good results are also obtained by dyeing at 120 °C (248° F) instead of 130° C (266° F) to protect elastomers.



- In **polycotton blends**, the cotton part is practically not stained with the disperse dyes and a simple soaping process of the reactive dye achieves a good cleaning result, thus managing in many cases to avoid the reductive wash prior to cotton dyeing.

● 50/50 POLYCOTTON BLEND

	Rinse	Soaping Process	Reductive Wash
POLYESTER			
COTTON			

● COLORFASTNESS TO WASHING AATCC 61 2A

	ORIGINAL	RINSE	SOAPING PROCESS	REDUCTIVE WASH
ACETATE	4.0	4.5	4.5	4.5
COTTON	4.0	4.5	4.5	4.5
NYLON	3.5	4.0	4.5	4.5
POLYESTER	4.0	4.5	4.5	4.5
ACRYLIC	4.5	4.5	4.5	4.5
WOOL	4.5	4.5	4.5	4.5



Eco-friendly

products that
do not contain
any type of
carrier



- **Shade reproducibility:** the results after months of use of the process in various plants, with different machines and articles, confirm a high reproducibility from laboratory to plant even with problematic dyes.



- **Level dyeing:** a conventional 5°C or 9°F/min gradient process cannot produce level dyeings, however, practical results of the FAST DYE LEVELING PROCESS confirm its effectiveness with these same conditions even heating at 9° C or 16° F / min.



- **Ecology:** this process has been developed to reduce the environmental impact to minimum levels to protect our ecosystem.



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