

Textile drum dryer, China

15.2 % less steam per unit of fabric

Two recirculating Jetomat® steam ejectors (Baelz) on a fabric drum dryer, converted in March 2012. The plant's specific steam use fell from 0.402 to 0.341 t of steam per unit of fabric.

-15.2 %

steam per unit of fabric
before and after the
conversion

0.402 to 0.341

t steam per fabric unit
specific steam use

2 × DN 50

Jetomat® steam
ejectors
Baelz 590, PN 16

Mar 2012

conversion
on the running dryer

01 The plant and the duty

PLANT	Textile mill, China
MACHINE	Fabric drum dryer: a train of steam-heated drying drums
EQUIPMENT	2 × Jetomat® steam ejector (Baelz 590, DN 50, PN 16), flash tank and one steam trap
CONVERTED	March 2012

02 Before

The drums were fed with steam through 2-way control valves, and every drum drained through its own steam trap. In this arrangement condensate lies in the drums as a film: the drum surface runs cooler away from the steam inlet, and the fabric dries unevenly and more slowly.

03 What changed

- Two Jetomat® steam ejectors (Baelz), driven by live steam, now feed the drums.
- The drum traps came out. Every drum drains untrapped into one flash tank.
- The flash steam is drawn back by the Jetomats and returned to the drums with the motive steam: a closed recirculation loop. Condensate leaves through a single trap.

04 Results

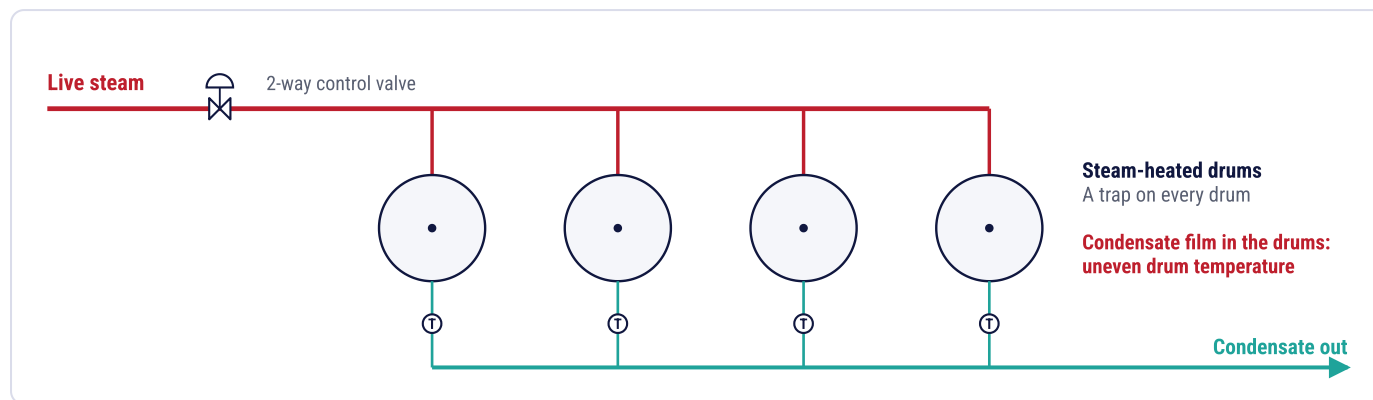
- Specific steam use fell by 15.2 %, measured on the same dryer before and after the conversion.
- Steam blows through every drum, so the drums heat evenly over their full length.

SPECIFIC STEAM USE · T OF STEAM PER UNIT OF FABRIC

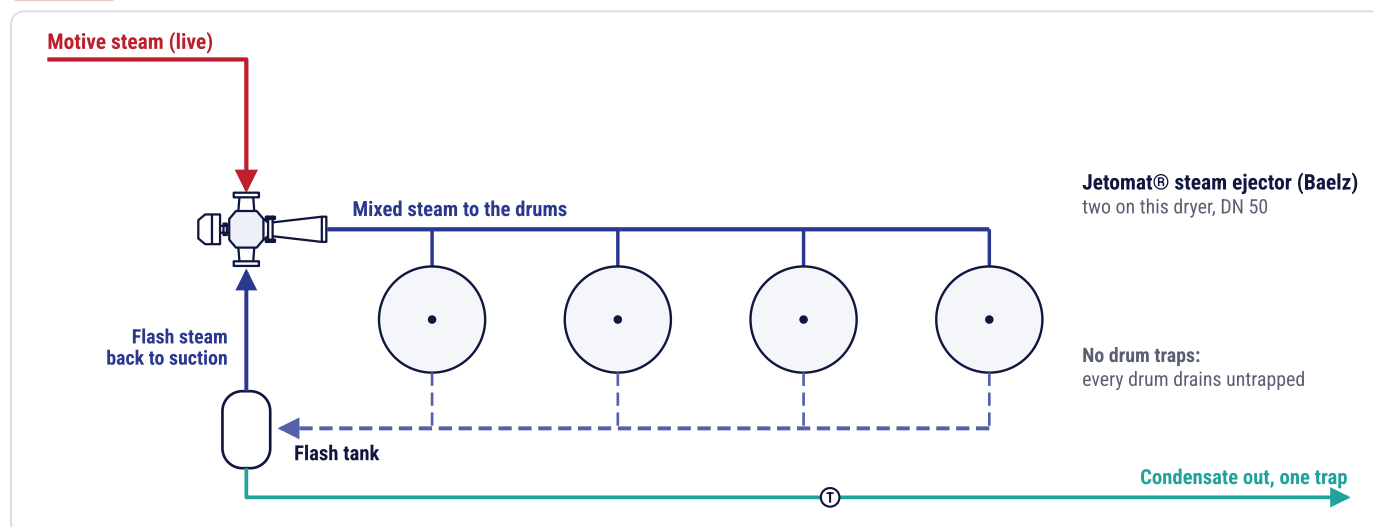
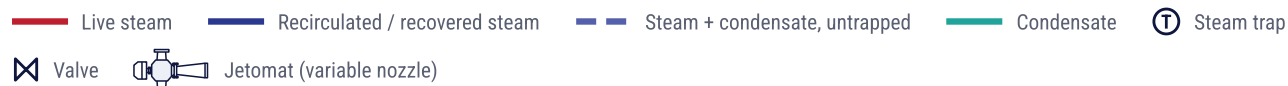
Drum dryer	Before	After	Change
Steam per unit of fabric	0.402 t	0.341 t	-15.2 %

05 The drum dryer, before and after

BEFORE



AFTER



06 Why it works

In a trapped drum, condensate collects until the trap opens, and the water film on the shell is a barrier to heat. With recirculation, steam moves through every drum at high velocity, keeps that film thin and sweeps the condensate out, so the full length of each drum heats evenly and the fabric dries faster on less steam. The flash steam that traps would have released goes back into the drums through the Jetomats. With no drum traps, there are fewer parts to fail.

SOURCE Before-and-after specific steam use as published by Baelz for this dryer (textile industry brochure, 2018). The scheme is the Baelz recirculation arrangement for drum dryers shown in the same brochure.