Ceramic Tile Industry

Moving Tiles with Accuracy, Reliability, and Care

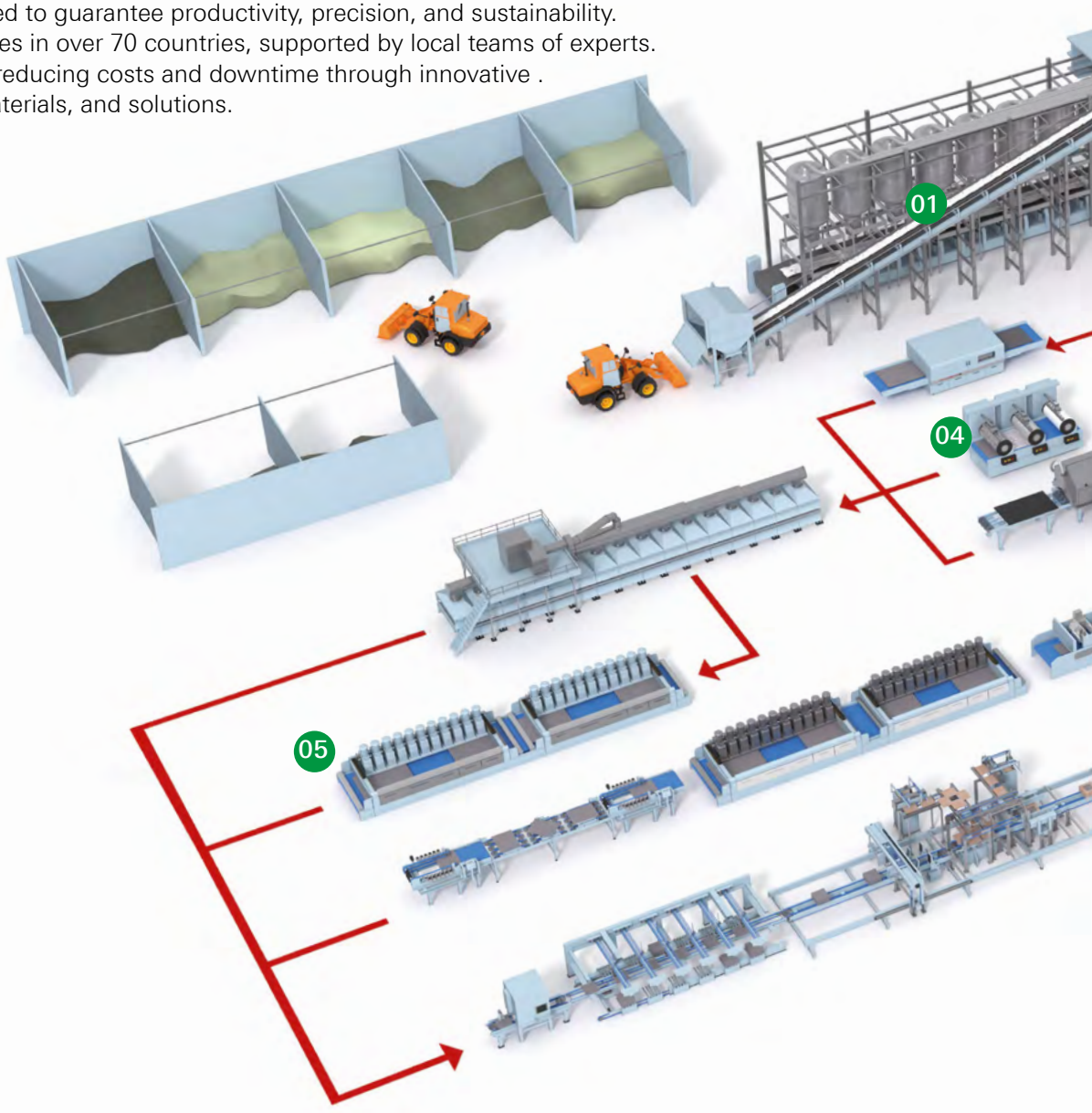
Industry process

Ceramic Tile Manufacturing – understanding the journey

The production of ceramic tiles follows a detailed and highly controlled process to ensure consistent quality, dimensional accuracy, surface finish, and durability. The variety of tile types, such as porcelain tiles, glazed wall tiles, large-format slabs, and hundreds of other products, requires different equipment and dedicated processes.

Habasit offers solutions that guarantee process reliability and high productivity, limiting unscheduled downtime:

- A complete range of belts engineered to withstand abrasive materials, heavy loads, and demanding processing conditions.
- Products designed to guarantee productivity, precision, and sustainability.
- Service guarantees in over 70 countries, supported by local teams of experts.
- Commitment to reducing costs and downtime through innovative . technologies, materials, and solutions.



01 Mixed Raw Material Conveying

02 Tile Transportation

03 Digital Printing & Glazing

04 Roller Screen Printing & Glazing

05 Lapping

06 Box Handling

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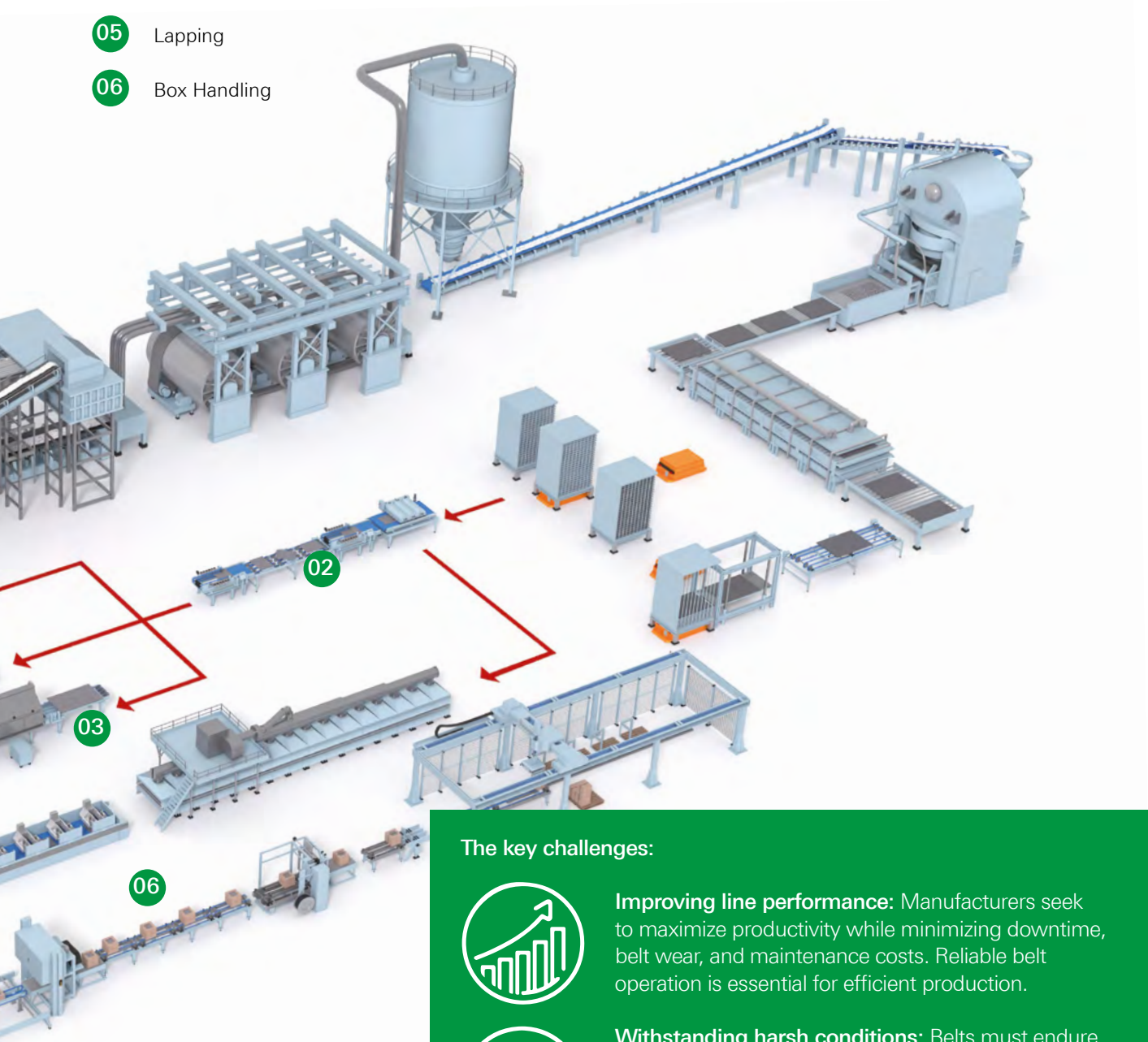


The key challenges:

Improving line performance: Manufacturers seek to maximize productivity while minimizing downtime, belt wear, and maintenance costs. Reliable belt operation is essential for efficient production.

Withstanding harsh conditions: Belts must endure abrasive stone dust, heavy loads, water, heat, resins, and aggressive chemicals while maintaining consistent performance and service life.

Ensuring product quality: Precise conveying and stable product positioning are critical to prevent defects such as thickness variations, polishing imperfections, inaccurate edge finishing, printing flaws, and material waste.

Process details

01 Mixed Raw Material Conveying

Pain points:

- Abrasion and scratching caused by the conveyed material.
- High mechanical stress due to the belt's length.
- Challenges in troughed roller-supported configurations, especially with narrow belts.

Solution:

NVT-2010/3 provides high abrasion resistance thanks to its dual cover construction, which effectively protects the carcass from wear. Its three-ply design ensures excellent longitudinal stiffness, maintaining reliable performance even in demanding applications and over long conveying distances. In addition, the multi-ply fabric structure makes the belt fully suitable for troughed configurations, ensuring stable and dependable operation on roller-supported systems.

Benefits for customers:

- Extended belt service life and reduced wear thanks to highly abrasion- and scratch-resistant cover.
- Reliable performance over long conveying distances.
- Dependable tracking in troughed conveyor systems.

Find out more on our website:

NVT-2010/3
Product Data Sheet

Belt type	Conveying Side	Pulley Side	Number of Fabrics	Thickness (mm)	Pulley diameter (mm)	Max Belt Width (mm)	Tensile Strength (k1% relaxed) (N/mm)
NVT-2010/3	PVC	PET	3	6.3	120	2400	23

02 Tile Transportation

Pain points:

- Reduced belt service life in a harsh environment.
- High load.
- Exposure to liquids.
- High grip required.

Solution:

High abrasion resistance is ensured using high-quality TPU material. The extruded E-RR-K round belt design makes it highly suitable for wet environments, as it does not absorb liquids and therefore maintains its performance even in the presence of large amounts of moisture. For long conveyors and applications with high loads, excellent resistance to elongation is provided by the reinforcement layer, where applicable. The most commonly used belt diameters are 10 mm and 12 mm, followed by 6 mm and 8 mm. To guarantee superior tile grip, the rough version is generally recommended.

Benefits for customers:

- Extended belt service life in abrasive environments.
- Reliable performance under high loads.
- Consistent operation in wet conditions.
- High-friction belt surface for secure tile transport.

Find out more on our website:

E-RR-K
Product Data Sheet

Family	Product	Material type	Hardness	Color	Ø in mm	Surface
Habicord round belts	E-RB06-KG-C250	TPU	90 Shore A	Green	6	Sand-finish
Habicord round belts	E-RB08-KG-C200	TPU	90 Shore A	Green	8	Sand-finish
Habicord round belts	E-RB10-KG-C100	TPU	90 Shore A	Green	10	Sand-finish
Habicord round belts	E-RB12-KG-C100	TPU	90 Shore A	Green	12	Sand-finish
Habicord reinforced round belts	E-RR06-KC-C250	TPU	90 Shore A	Cobalt blue	6	Sand-finish
Habicord reinforced round belts	E-RR08-KC-C200	TPU	90 Shore A	Cobalt blue	8	Sand-finish
Habicord reinforced round belts	E-RR10-KC-C100	TPU	90 Shore A	Cobalt blue	10	Sand-finish
Habicord reinforced round belts	E-RR12-KC-C100	TPU	90 Shore A	Cobalt blue	12	Sand-finish
Habicord rough round belts	E-RB06-KG-C250+R	TPU	90 Shore A	Green	6	Rough
Habicord rough round belts	E-RB08-KG-C200+R	TPU	90 Shore A	Green	8	Rough
Habicord rough round belts	E-RB12-KG-C100+R	TPU	90 Shore A	Green	12	Rough

03 Digital Printing & Glazing

Pain points:

- Accurate positioning between printing stations.
- Maintaining micron-level repeatability and belt stability.

Solution:

ENU-50AXBD, engineered as part of the Smart Printing Belt system, delivers exceptional repeatability and self-calibrating positioning accuracy for demanding digital printing and glazing lines. Its high modulus of elasticity, combined with a unique construction in which a single fabric layer carries most of the load, keeps the neutral axis remarkably stable, far more so than in conventional polyester printing blankets, enabling extreme precision even under continuous operation. This makes it the ideal choice for large-format tile printing, where product weight can compromise registration and print quality. Reinforced with high-performance aramid fabric, the belt self-corrects to maintain outstanding dimensional stability and micron-level accuracy, even at widths exceeding 1,200 mm, ensuring sharp, consistent prints run after run.

Benefits for customers:

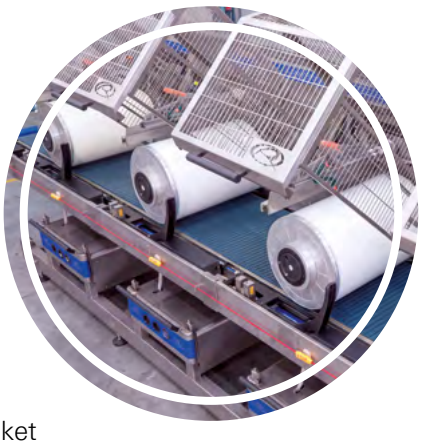
- Consistent repeat accuracy of ±10 µm for your signature designs.
- Automatic, continuous calibration.
- Reduce material waste thanks to reliable print accuracy.

Find out more on our website:

Smart Printing Belt
Read more

Belt type	Conveying Side	Pulley Side	Number of Fabrics	Thickness (mm)	Pulley diameter (mm)	Max Belt Width (mm)	Tensile Strength (k1% relaxed) (N/mm)
ENU-50AXBD	TPU	PET	3	2.3	80	4000	26
ENU-20EXBD	TPU	PET	2	2.1	80	4000	12

04 Roller Screen Printing & Glazing



Pain points:

- Positioning accuracy, repeatability, and lateral stability.
- Surface grip reliability.
- High loads.
- Reduced belt lifetime in harsh printing environments.

Solution:

The SAQ-8E 07 and NAQ-10ELDV belts are successfully used in these applications, providing the required performance for smaller machines. This solution is an effective alternative for machines with up to two or three printing heads, where characteristics comparable to those of a printing blanket are still required in terms of positioning, accuracy and repeatability. It also offers high surface grip, helping to keep the product stable throughout the process, while maintaining a price level aligned with market expectations. However, it is not recommended for applications with more than three printing rollers, where higher-performance solutions may be required.

Benefits for customers:

- Consistent positioning accuracy, repeatability and lateral stability.
- High grip on the surface.
- High tensile resistance.
- Abrasion resistance and chemical resistance to inks and chemical agents used in the process.

Find out more on our website:

SAQ-8E 07
Product Data Sheet

Belt type	Conveying Side	Pulley Side	Air permeability ($m^3/m^2/h$)	Thickness (mm)	Pulley diameter (mm)	Max Belt Width (mm)	Tensile Strength (k1% relaxed) (N/mm)
SAQ-8E 07	PVC	PET	2	3	50	3000	6.5
NAQ-10ELDV	PVC	PET	4	9	350	2400	24

05 Lapping

Pain points:

- Severe abrasion and surface wear.
- Tearing and cutting of the top surface.
- High grip required to keep tiles stable.
- Extremely wet environment.

Solution:

The NAY-50EHAV pairs excellent abrasion resistance with a high-grip surface, keeping tiles stable throughout conveying and processing while promoting efficient water drainage. With the highest elongation resistance in its range, plus high lateral stiffness, it ensures easy tracking, reliable operation on long conveyors, and smooth, vibration-free running with easy, calibrated splicing.
As tile formats grow larger and belts wider, product stability becomes critical. For widths of 1,500 mm and above, where fixed side guides are often absent, the NAY-50EHAV's superior grip keeps tiles secure across the entire production process.

Benefits for customers:

- Belt body covered with a highly abrasion-resistant material.
- Product able to reduce tile breakage.
- Top cover material and embossing with the required grip.
- Belt body coverage with top cover in a thermoplastic material and a deep impregnation on the running side.

Find out more on our website:

NAY-50EHAV
Product Data Sheet

Belt type	Conveying Side	Pulley Side	Number of Fabrics	Thickness (mm)	Pulley diameter (mm)	Max Belt Width (mm)	Tensile Strength (k1% relaxed) (N/mm)
NAY-50EHAV	PVC	PET	2	2.1	40	3200	6.5
NAX-50EHAV	PVC	PET	4	9.2	350	2200	24

06 Box Handling

Pain points:

- Precise positioning and repeatability.
- High and heavy loads.
- High acceleration and deceleration.
- Smooth movement.

Solution:

This application requires a high level of positioning accuracy and repeatability to ensure consistent process performance. The AT10-S-01 PU timing belt must be capable of handling high loads while maintaining reliable operation under rapid acceleration and deceleration conditions. In addition, smooth and vibration-free running is essential to preserve product stability and ensure precise movement throughout the process.

Benefits for customers:

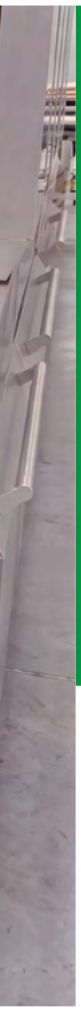
- Precise, repeatable positioning – reliable sprocket engagement and exact pitch distance.
- Handles high acceleration and deceleration thanks to strong, stable steel cords.
- Smooth, quiet movement.
- Long-lasting abrasion resistance.

Find out more on our website:

AT10-S-01 PU
Product Data Sheet

Belt type	Belt Width (mm)	Material	Covers	Admissible tensile force open-end belt (N)	Admissible tensile force, joined belt (N)	Min. Pulley size Ø dp (nA)
AT10-S-01 PU	25	White TPU	PA fabric	3500	1750	80
AT10-S-01 UU	25	White TPU	No	3500	1750	80
T10-S-01 UU	25	White TPU	No	3500	1750	64

How to Reduce Tile Breakage in Lapping Machines?



Customer overview: A leading Italian OEM that uses PVC belts on its polishing and lapping machines.

Challenge: Polishing and lapping premium gres tiles requires a high-grip belt with an abrasion- and cut-resistant top cover, plus constant thickness across the surface and joint, and easy installation. Belt widths: 880–1,480 mm; lengths: 12–34 m.

Solution: The customer prefers PVC over rubber to avoid thickness inconsistencies at the joint. As their main supplier, Habasit provides the NAX-50EHDV, shipped o**pen-end** and **endless** with a Flexproof 120 × 10 mm joint. The customer values its abrasion resistance, durability and ease of installation, as well as the reduction in broken tiles than rubber solutions. The NAX-50EHDV also ensures smooth, vibration-free running with no elongation, even on very narrow, long belts (880 mm × 34 m).

Habasit International AG
CH-4153 Reinach-Basel
+41 61 715 15 15
+41 61 715 15 55

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