

Unshakable. Under the harshest conditions.



Competence in cement, gypsum, sand & gravel

Schenck Process Group – your partner worldwide



Acting locally to support your needs, the Schenck Process Group is working where you are.

With a global network of Locations and competent partners, the name Schenck Process is synonymous throughout the world with process expertise and well-engineered measuring technology for industrial weighing, feeding, conveying, screening, automation and air filtration technology.

Our core competencies include feeding bulk materials, controlling flows of material, weighing goods, recording flows of goods, automating transport processes and planning processes up to turn-key deliveries.

Individual solutions for the most extreme conditions



The harsher the environmental conditions, the more resilient the technical systems must be. This particularly applies to industries such as cement and gypsum production.

Schenck Process Group offers these industries a wide range of reliable systems and sound application know-how.

Our products and applications provide control of continuous material flows; continuous weighing and feeding systems for coarse bulk materials, powders, dusts, fossil fuels and alternative fuels; screening technology; vibratory and volumetric mechanical feeding systems; pneumatic conveying systems; heavy load acquisition; and discontinuous weighing solutions.

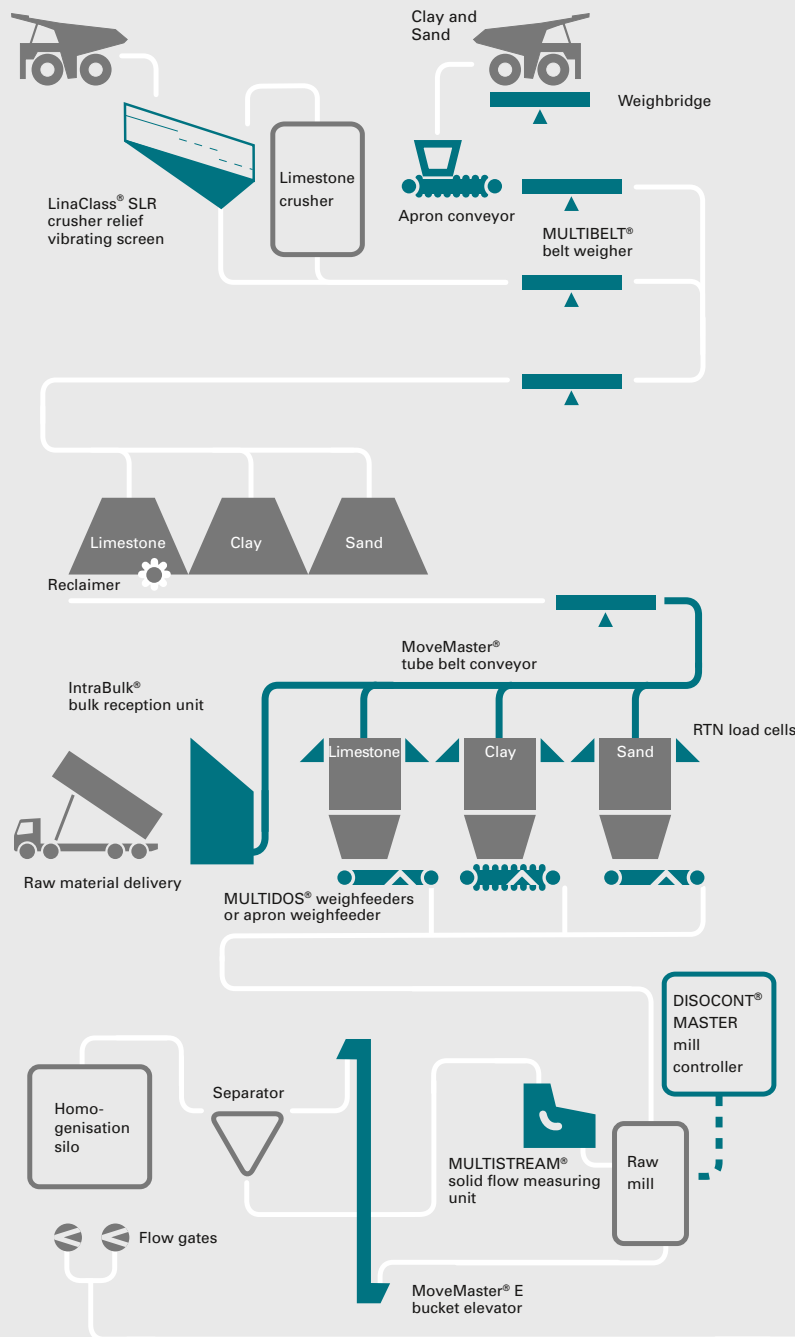
Cement production

First the raw material for making the cement is broken up in a crusher. LinaClass® linear vibrating screens increase the effectiveness of the system by allowing pieces of the right size to bypass the crusher.

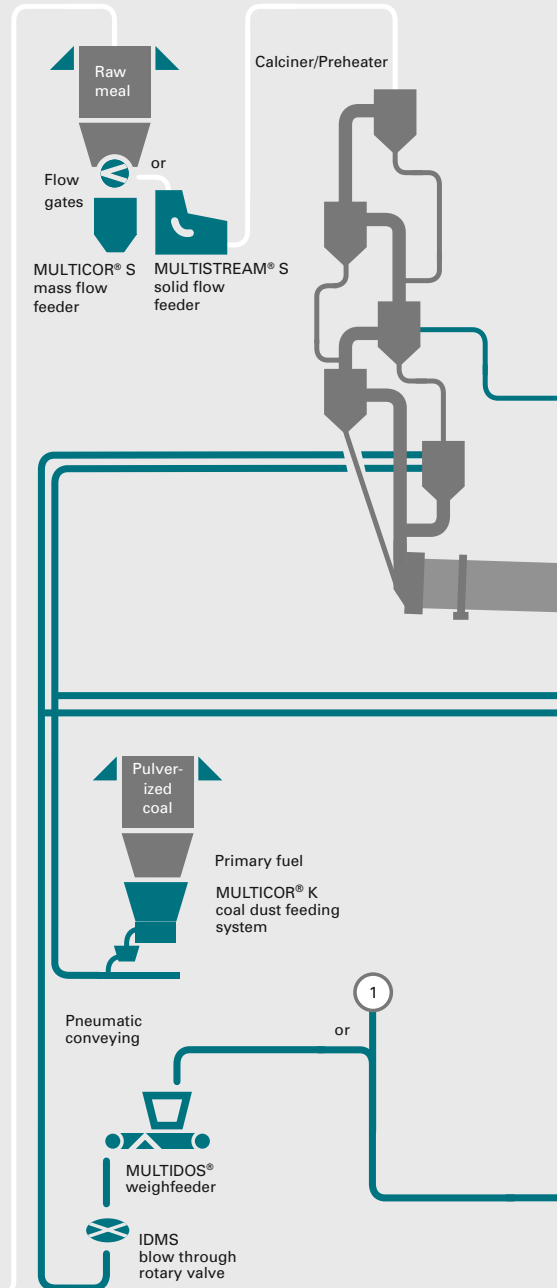
From here the material moves to the storage area, where the crushed stone is stored and homogenised in mixing beds. The mixture required to make a high-quality raw meal is mixed with MULTIDOS® weighfeeders and ground in ball or bowl mill crushers. The weighfeeders, which are precisely matched to the properties of the material, ensure smooth discharge from the silos.

The heating of the raw meal to make cement clinker takes place in rotary kilns at a temperature of around 1,450°C. The raw meal is fed into the kiln by MULTICOR® mass flow feed devices, which exploit the Coriolis effect. The fuel supply is also managed by Schenck Process weighing and feeding equipment. The coal dust is precisely measured by the MULTICOR® K measuring devices and fed by the MULTICELL horizontal rotary feeders. The system can handle an output of a few hundred kilograms to 50 tonnes per hour with a feed accuracy of ±0.5%. The pulsation-free

Raw Material Handling



Calcliner & Kiln Feeding

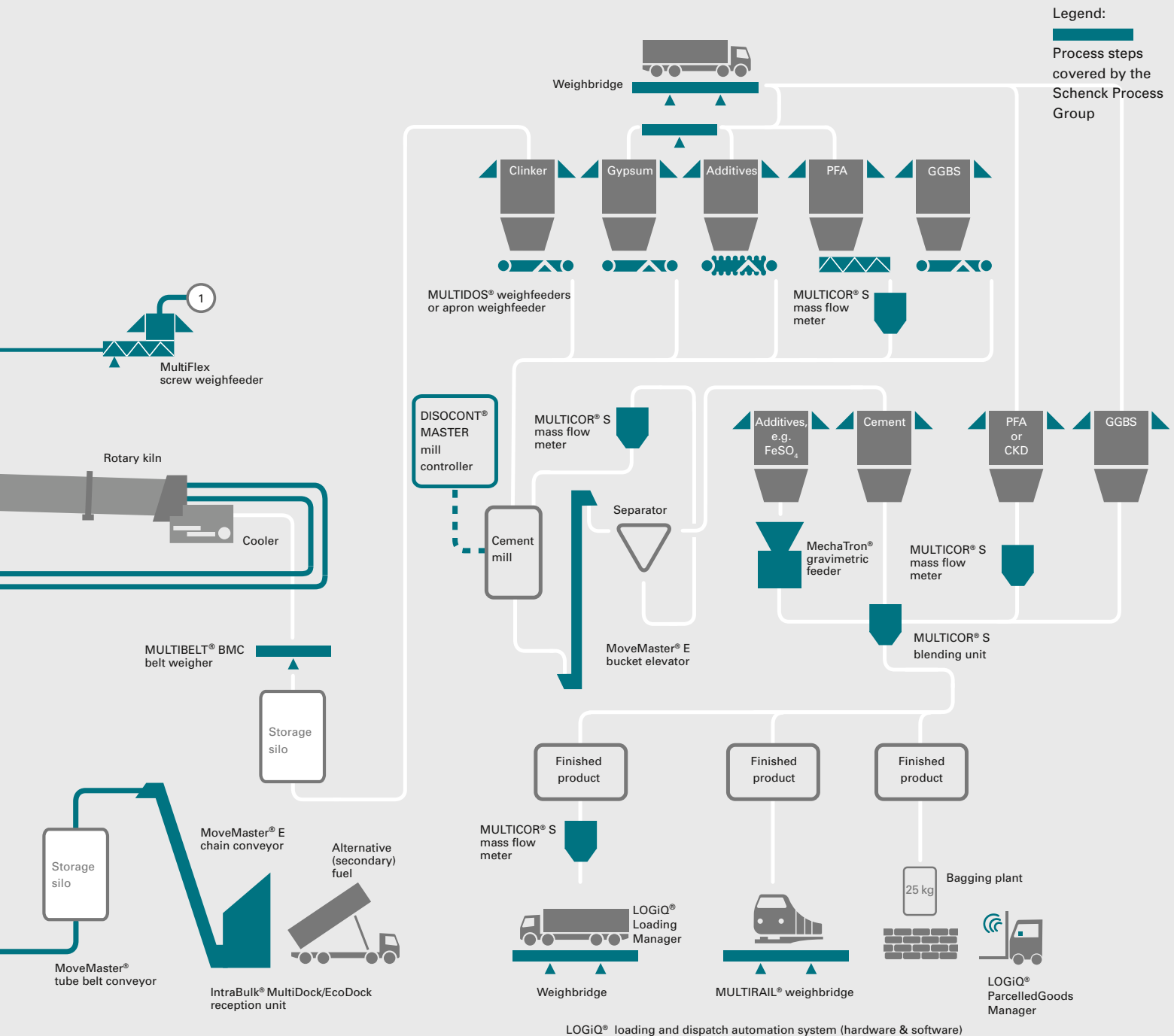


transport of the material to the main burner and calciner is also engineered by Schenck Process. The clinker is then cooled to around 200°C and weighed en route to the storage bins.

Alternative fuels such as fluff, sewage sludge and biomass are used as additional fuel sources. We offer complete solutions and components for highly accurate feeding of these materials.

In the final step the clinker is mixed with gypsum and other additives to make the finished cement. MULTIDOS® weighfeeders ensure the precision of the mix. It is then transported to the terminals for loading on to road or rail vehicles or ships. This stage is automated by the loading automation system LOGiQ®. Cement works are controlled from state-of-the-art, microprocessor-based control rooms, which receive all the data from the process. All weighing and feeding data is made available via field bus thanks to the electronic system DISOCONT® Tersus.

Cement Storage and Dispatch



Efficient, economical and reliable at every stage of the process

Schenck Process in the cement industry



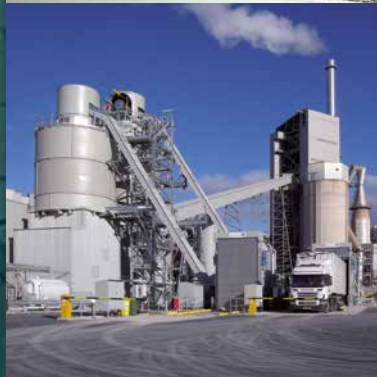
The main components of cement are limestone, clay and marl. From the quarry they are transported to a crusher system, where they are broken up. At this stage, products and applications from Schenck Process already come into play. LinaClass® linear vibrating screens, for example, increase the effectiveness of the crusher. And that's just the beginning.

From raw meal and clinker production to the high-quality final product, Schenck Process measuring and feeding technology plays a starring role in cement manufacturing, delivering perfect mixing, pulsation-free precision feeding and accurate weighing. At every stage of the process, under the toughest conditions and no matter how difficult the application, Schenck Process offers the cement industry a range of reliable and robust systems, economical solutions and extensive application know-how.



Continuous mix preparation for cement production

To meet the quality requirements of the cement industry, there are two stages at which accurate mix preparation is essential. Firstly, the right relative amounts of raw materials need to be used, and secondly, special cements require the accurate addition of additives. Mix preparation is handled by MULTIDOS® weighfeeders. Whether the material is sticky or free-flowing, whether feeding kilograms or tonnes, there is a suitable weighfeeder for every requirement.



Alternative fuels

Reducing energy costs is a top priority for every company. To achieve this, one approach is to use alternative fuels for kilns and boilers such as shredded plastic and production waste, old tyres and grinding dusts, meat-and-bone meal and processed domestic waste. The Schenck Process system for alternative fuels is not only cost-effective, but also flexible.



Coal dust feeding

Schenck Process provides perfectly adapted technology with the MULTICOR® K Coriolis coal dust feeding system, paired with the MULTICELL horizontal rotary feeder. This offers excellent wear resistance due to high-quality materials, with guaranteed feed accuracy of $\pm 0.5\%$ and a feed consistency of $\pm 1\%$. It complies with statutory limit values for SO_x , NO_x and CO_2 in the kiln and its emissions.



Feeding of powdered materials and meal

Our effective and precise working solutions consist of three modules: the mass flow silo, various optimised feeding devices for the controlled extraction of material from the silo, and MULTICOR® S or MULTISTREAM® G, which are designed to measure the material flow.

Schenck Process also provides silo engineering services to ensure that the extraction technology works properly.



Dense phase conveying

Dense phase conveying is suitable for transporting difficult, abrasive or friable materials and pushes material along a pipe in a plug form at relatively low velocities. This means minimal wear on pipes / bends, promoting minimum maintenance and long life. Efficient use of compressed air also reduces power consumption and operating costs.

→ **GRAVIMETRIC FEEDING**



MULTIDOS®

Weighfeeder

- ❖ For bulk solids with very diverse properties
- ❖ Feed rate up to 1,500t/h
- ❖ Accuracy up to $\pm 0.25\%$
- ❖ MechaTronic design with integrated electronics
- ❖ Belt width from 650 mm up to 2,000 mm

→ **GRAVIMETRIC FEEDING**



MULTIDOS® VDP

Apron weighfeeder

- ❖ For difficult-to-extract bulk solids
- ❖ Temperature range up to 250°C
- ❖ Feed rate up to 1,000t/h
- ❖ Direct weighing technology
- ❖ MechaTronic design with integrated electronics
- ❖ Belt width from 1,000 mm up to 2,000 mm
- ❖ Extraction moment up to 16,000 Nm

→ **GRAVIMETRIC FEEDING**



MultiFlex

Gravimetric screw feeder

- ❖ For all kinds of alternative fuels (explosive and non-explosive)
- ❖ Dust-proof, enclosed design
- ❖ Minimum bulk density 0.05 t/m³
- ❖ Feed rate up to 300 m³/h
- ❖ On-stream calibration possible without additional equipment

→ GRAVIMETRIC FEEDING

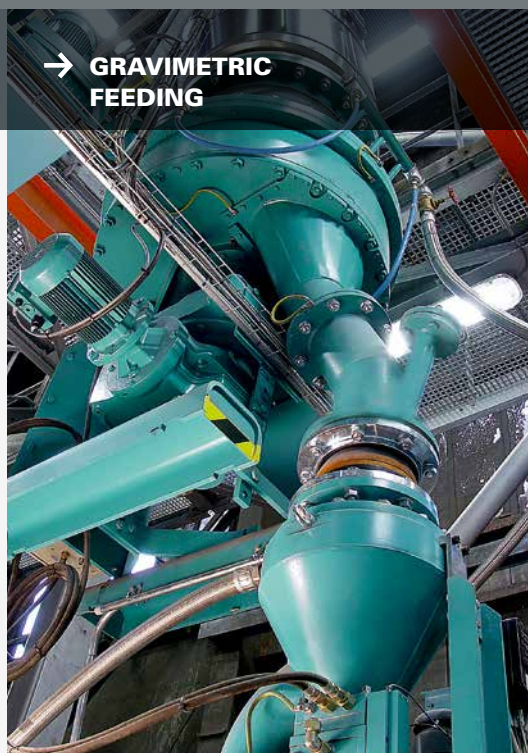


MechaTron® Coni-Flex

Loss-in-weight-feeder

- ❖ For powders, granulates, chips and fibres
- ❖ Special design for ferrous sulfate available
- ❖ Volumetric or gravimetric bulk solids feeding
- ❖ Feed hopper with flexible wall
- ❖ Feed accuracy better than $\pm 0.5\%$
- ❖ Feed rate up to 32,000 dm³/h

→ GRAVIMETRIC FEEDING



MULTICOR® K/MULTICELL MC

❖ Measuring system based on Coriolis principle

- ❖ Unaffected by outside influences
- ❖ For coal with very diverse properties
- ❖ Explosion-proof up to 10 bar, arrests flame transmission
- ❖ Accuracy $\pm 0.5\%$, feed consistency $\pm 1\%$
- ❖ Feed rate up to 50 t/h
- ❖ Combined with the MULTICELL horizontal rotary feeder, forms a gravimetric feeding system

→ GRAVIMETRIC FEEDING/WEIGHING



MULTICOR® S

❖ Measuring system based on Coriolis principle

- ❖ Unaffected by outside influences
- ❖ For dust and meal with very diverse properties
- ❖ Dust-proof design
- ❖ Accuracy $\pm 0.5\%$
- ❖ Feed rate up to 1,000 m³/h (750 t/h) for rotary kiln capacity of 10,000 t/day
- ❖ Forms gravimetric feeding system by use of metering hoppers, tailored to bulk solids requirements

→ **GRAVIMETRIC
FEEDING/WEIGHING**



MULTICOR® R

- ❖ Measuring system based on Coriolis principle
- ❖ Unaffected by outside influences
- ❖ For dust and meal with very diverse properties
- ❖ Dust-proof design
- ❖ Weighing module with wireless data transmission
- ❖ Accuracy $\pm 0.5\%$
- ❖ Feed rate up to 800 m³/h (600 t/h) for rotary kiln capacity of 10,000 t/day
- ❖ Forms gravimetric feeding system by use of metering hoppers, tailored to bulk solids requirements

→ **GRAVIMETRIC
FEEDING/WEIGHING**



MULTISTREAM® G

- ❖ Uses the deflection chute measuring principle
- ❖ For dust and meal with very diverse properties
- ❖ Dust-proof housing
- ❖ Feed rate up to 1,250 m³/h (1,000 t/h) for rotary kiln capacity of 10,000 t/day
- ❖ Forms gravimetric feeding system by use of prefeeders, tailored to bulk solids requirements

→ **CONVEYING**



IDMS

- Blow-through rotary valve
- ❖ For all kinds of alternative fuels (explosive and non-explosive)
 - ❖ Compact, space-saving design while offering high power density
 - ❖ High and constant fill levels thanks to large inlet cross-section
 - ❖ Highly abrasion-resistant wearing parts and long service life
 - ❖ Reliable pneumatic conveyance thanks to constant leakage air
 - ❖ Robust construction in line with German industry standards

→ GRAVIMETRIC WEIGHING



MULTIBELT®

Belt weigher

- ❖ For all kinds of bulk solids
- ❖ Accuracy up to $\pm 0.25\%$
- ❖ Feed rate up to 20,000t/h
- ❖ Belt width from 500 mm up to 2,000 mm
- ❖ Suitable for use in ATEX zones
- ❖ Design for clinker measurement in bucket conveyor systems available
- ❖ Legal-for-trade model available

→ GRAVIMETRIC WEIGHING

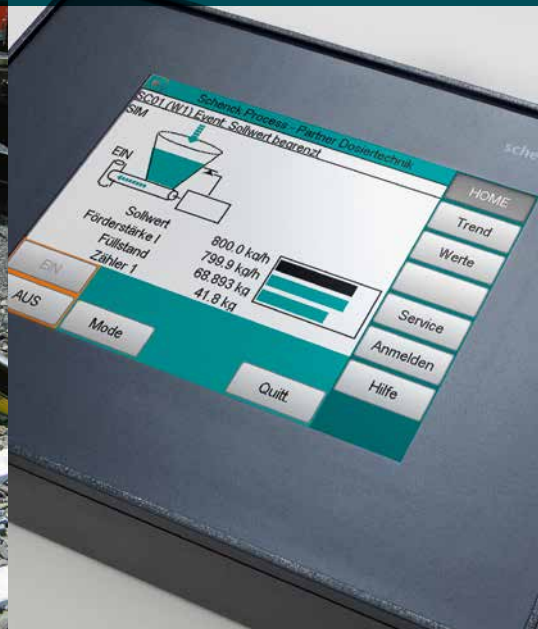


MULTIRAIL® LegalWeight

Train weighing

- ❖ Dynamic railway scale for all wagon types
- ❖ Legal-for-trade accuracy
- ❖ No foundation
- ❖ No rail gap
- ❖ Fully automatic operation
- ❖ Very quick installation
- ❖ Static/dynamic platform weighbridges also available

→ WEIGHING ELECTRONICS



DISOCONT® Tersus

Weighing and feeding electronics

- ❖ For control of all kinds of continuous weighing and feeding applications
- ❖ In field or control cabinet installation
- ❖ Communication with PLC by field bus technology (Profibus, Modbus, DeviceNet etc.)
- ❖ Commissioning and diagnostics supported by graphics
- ❖ Wireless access for service

→ CONVEYING



Mechanical conveying and MoveMaster®

Bulk conveying

- ❖ Tube belt conveyor
Three-dimensional transportation over long distances (up to approx. 1,000 m) and problematic topographic areas
- ❖ U belt conveyor
Conveying powdery and granular materials horizontally
- ❖ Corrugated belt conveyor
Cross rigid belt with deads and sidewalls, inclined or vertically upward material conveying
- ❖ En-masse chain conveyor
Horizontal and/or upward material conveying (max. inclination 75°) over medium distances (up to 70 m)

→ RECEPTION



IntraBulk®

Truck unloading

- ❖ IntraBulk® MultiDock
 - Screw extractor floor with five screws
 - Designed for trucks with walking floor or tipping trucks
 - Unloading capacity up to 500 m³/h
 - Dust extraction system for trucks with walking floor
 - For various types of RDF
- ❖ IntraBulk® EcoDock
 - Screw extractor floor with five screws
 - Designed for trucks with walking floor
 - Unloading capacity up to 100 m³/h
 - For various types of RDF
- ❖ IntraBulk® BRU
 - Receiving buffer hopper and apron feeder as link to the downstream process
 - For various products
 - Dust extraction system
 - Installation below and above ground
 - Unloading capacity up to 500 m³/h

→ LOGISTICS AUTOMATION



LOGiQ® Loading Automation

- ❖ Logistics solution for bulk materials and cargo industry
- ❖ Automation of all loading processes from ordering through to shipment
- ❖ Faster loading due to accurately defined processes
- ❖ Mass flow management of incoming and outgoing materials by road, rail and ship



Process
Advanced
Service
System

PASS

Complete solutions for your after-sales requirements

Looking for after-sales solutions? Our extensive Process Advanced Service System (PASS) provides you with after-sales services – customised to your specific requirements.

The framework of our PASS program is designed with you in mind. With the guidance of our experienced after-sales team, you can create PASS packages comprising original spare and wear parts, various services and high quality components to meet your needs.

PASS is based on a modular principle. You choose individual PASS products or a combination thereof as required. The products are classified in four categories to make it easier for you to find the right modules.

We will happily provide you with individual consultation, either as part of a PASS contract or on individual enquiry.

Whatever Full Service means to you – let's create it together!

Our PASS service categories

 Repair

 Inspection

 Management

 Support

Schenck Process TestCenters worldwide.

Test results you can rely on.



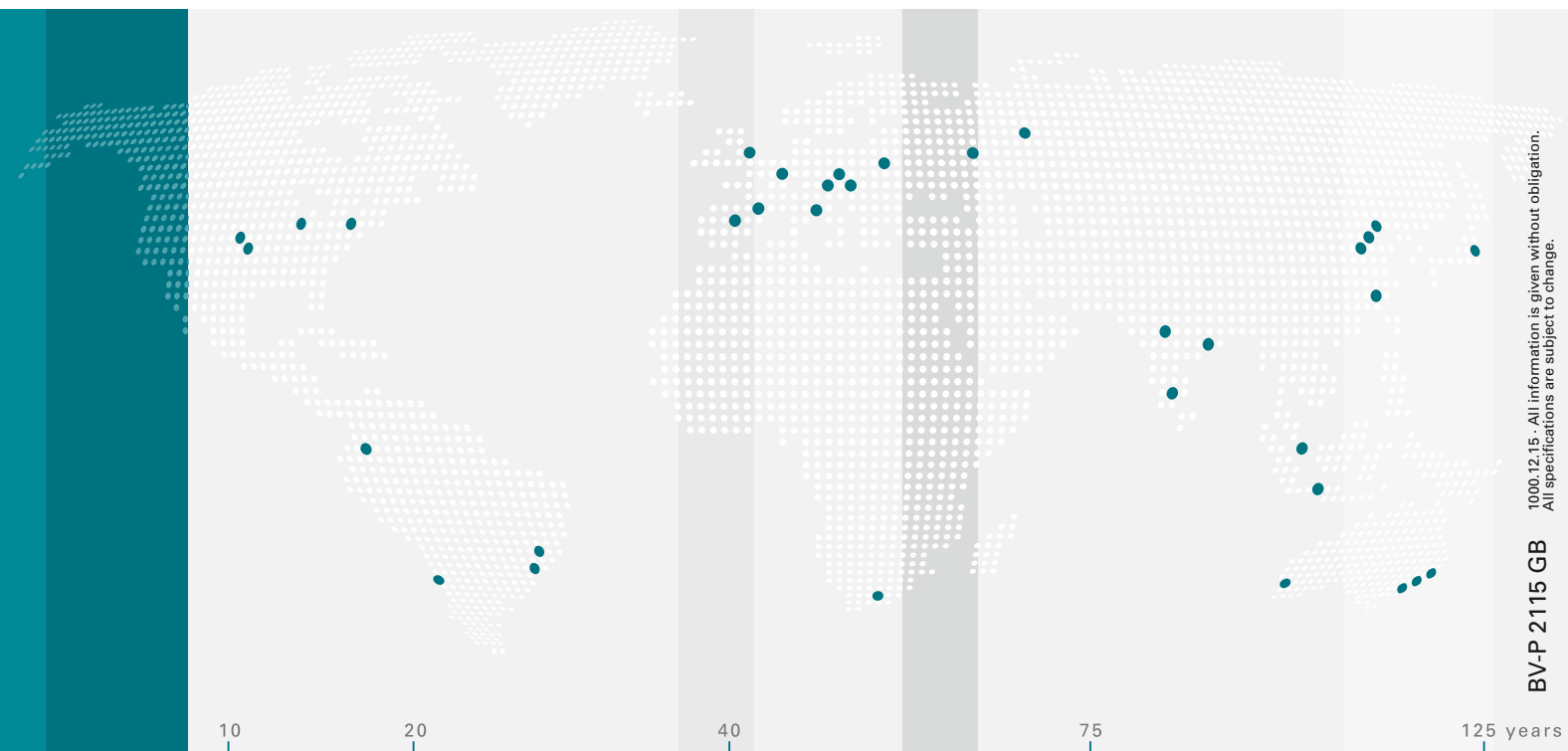
No matter what materials you use, processes need to run smoothly. When processing your products, if you want complete peace of mind that materials and machines are perfectly matched, realistic tests in our TestCenters are what you need.



Schenck Process has an extensive materials database covering over 10,000 samples for which characteristics such as particle size distribution, shape, porosity, bulk density, temperature, moisture content, fragility and air retentiveness have been measured and the most suitable conveying method determined.

This practical experience is invaluable in determining the most effective solution for a customer's application and details of every new test are added to the database.

This resource is also available to customers who independently need to establish the flow characteristics of a material or to help solve on-site problems with existing or competitor systems.



1000.12.15 - All information is given without obligation.
All specifications are subject to change.

BV-P 2115 GB

The Schenck Process Group is a global leader in
industrial weighing and feeding technology /// screening and separation systems for bulk materials /// dust collection
and air filtration technology /// pneumatic and mechanical conveying solutions /// automation and diagnostic technology

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we make processes work