

SOLUTIONS FOR PHARMACEUTICAL MANUFACTURING

FLOORING, FIRE STOPPING,
SEALING AND BONDING

 illbruck

 Flowcrete

 Nullifire

 Vandex

 TREMCO

 Dryvit

 Nudura

 **TREMCO**
Construction Products Group

SAFETY AND DURABILITY FOR PHARMACEUTICAL MANUFACTURING PLANTS

As an architect, contractor or developer for controlled research and manufacturing environments in Pharmaceutical manufacturing facilities, the project must meet the requirements and specifications of the customer, as well as the state-of-the-art standards and norms.

Tremco CPG Europe can support you with professional, high performance and easy to apply holistic solutions such as resin flooring, sealing and bonding, fire protection and much more that are designed to meet the challenging requirements of clean/dry rooms. Characteristics such as impermeability against water, humidity and air, ESD approved, biologically resistant, low particle emission and low outgassing behaviour can be factored in with such recommended solutions.

As well as your project benefitting from our deep know-how in building physics and decades of experience from countless projects, as a manufacturer we will support you from concept design through to application. Impress your clients with efficiency and cost-effectiveness and hand over projects that amaze with their outstanding safety, durability and energy efficiency.



Low Emission

Designing systems with low VOC emissions to improve air quality and create a contamination-free process environment.



Hygiene

Highest hygiene standards through flooring solutions containing antimicrobial additives, installed in seamless applications.



Cleanroom

Offering low particle emission materials suitable for cleanliness classes ranging from ISO 4 to ISO 8 for cleanroom Grade A to D according GMP Annex 1



Safety

Solutions for protected ATEX areas that are at risk of flammable and explosive hazards. Safe environment for handling chemicals such as solvent, reagents or gases.



Innovative Systems



Compatible product solutions for durable results.



Certified Products

Meets the requirements of EN ISO 846 (method A & C) as well as VDI 6022 (Hygiene requirements for ventilation and air-conditioning systems). Indoor Air Certificate by the Sentinel Haus Institut.

A family of construction product solutions under one roof

-  illbruck Sealing, Bonding & Insulation
-  Flowcrete Flooring
-  Nullifire Passive Fire Protection
-  Vandex Concrete Repair & Waterproofing
-  TREMCO Waterproofing & Roofing
-  Nudura Insulated Concrete Foamwork (ICF)
-  Dryvit External Insulation and Finishing Systems (EIFS)

OUR SOLUTIONS

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FLOORING

The imperative for all surfaces to be easily cleaned, non-porous, non-shedding, and, in certain instances, compliant with rigorous decontamination protocols narrows down the practical options. Selection choices are further constrained by performance demands influenced by the process environment, installation constraints, and chemical considerations (including process, cleaning and disinfection).

Main Criteria:

- Slip resistance
- Chemical resistance
- Thermal shock resistance
- Abrasion and AGV Traffic
- Static conductivity
- Aesthetic and Lightning
- Airborne molecular contamination control

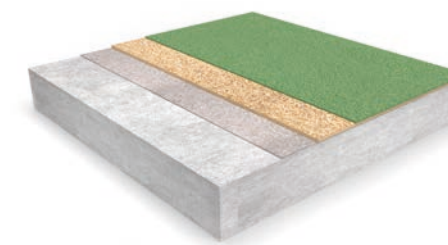


Flowcoat SF41 LE



Smooth and Decorative Systems

Surface decontamination is a crucial criterion to ensure compliance with FDA and/or GMP Annex 1 requirements. Choosing the right flooring system allows addressing essential pharmaceutical industry needs such as airborne molecular contamination, low VOC emissions, aesthetic appearance, and color clarity, contributing to a conducive work environment.



Flowcoat SF41 LE

A high performance, solvent free thin resin coating

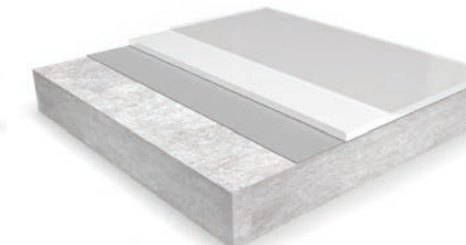
Thickness
0,350 mm – 0,500 mm

Application areas

- Chemical and Equipment storage
- Warehouse

Benefits

- Decorative and colored
- Seamless and smooth surface that is easy to clean and maintain
- Very low VOC emission for room in vicinity of cleanroom area



Peran SL

Glossy, hygienic, hard wearing and self smoothing floor finish

Thickness
2,0 – 3,0 mm

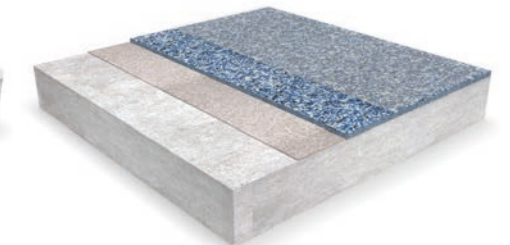
Application areas

- Production areas
- Laboratories
- Packaging

Benefits

- Decorative and colored
- Seamless and smooth surface that is easy to clean and maintain, suitable for cleanroom
- Hard wearing and high load strength
- Very low VOC emission for air quality in cleanroom
- Attractive: enhances the appearance of working environment

For electrostatic protection use Peran ESD SL (see page 7).



Peran STB Compact

Very hard wearing, scratch resistant and decorative floor topping made of colour stable quartz encapsulated in a clear resin binder

Thickness
3,0 – 4,0 mm

Application areas

- Laboratories
- Maintenance
- Warehouse
- Packaging

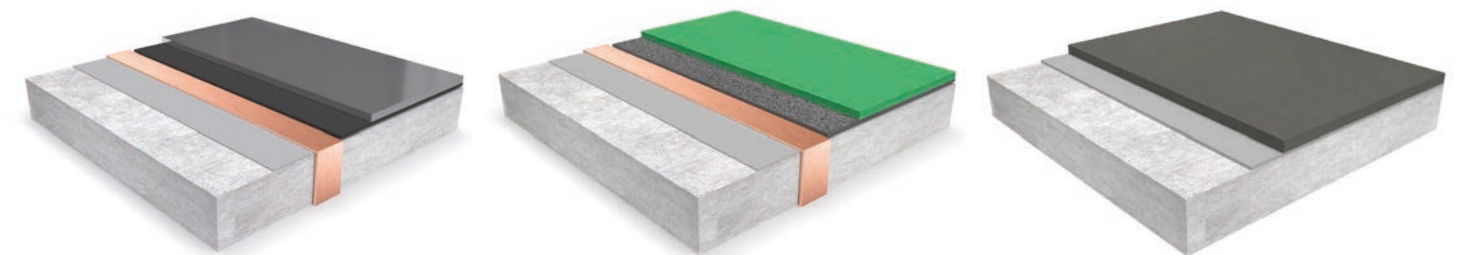
Benefits

- Very robust for high traffic and accidental impact, with falling heavy object
- Very low VOC emission (Version Peran STB Public) for indoor air quality in laboratories
- High aesthetics for heterogeneous surface finishing

For electrostatic protection use Peran ESD STB Compact.

Functional Systems

Significant safety performance, especially in environments where the presence of solvents and/or volatile explosive substances classifies areas as ATEX zones, with a high risk of explosion or fire. Resistance to chemical exposure, such as spills on the floor, is a critical factor in selecting the appropriate coating. Additionally, considerations like protection against electrostatic discharge are essential, particularly in areas with Automated Guided Vehicle (AGV) traffic.



Peran ESD SL

An anti-static, self-smoothing resin floor finish that is easy to clean.

Typical thickness: 2.5mm

Application Areas:

- Dry process environments
- EPAs, ESD protected areas
- Production areas, including ATEX and/or AGV circulations
- Cleanrooms and dry rooms

Benefits:

- Anti-Static: Meets EN IEC 61340 and EN 1081 requirements
- Hygienic: Provides a seamless finish that is easy to clean and maintain
- Durable: Ideal for areas with sustained medium to heavy foot traffic
- High load strength
- Attractive: Enhances the appearance of working environment

Flowfresh ESD SL

A self-smoothing, static controlling, medium duty, resin floor finish with exceptional wear resistance, chemical resistance and temperature resistance up to 75°C.

Typical thickness: 2 to 3 mm

Application Areas:

- Wet and dry process environment
- Suitable for accidental spillage of NMP
- Suitable for traffic of heavy AGV
- Production & storage areas, including ATEX
- Cleanroom and dry room

Benefits:

- Anti-Static: Meets EN IEC 61340 (Rg<1GΩ) and EN 1081 (Rg<1MΩ) for electrical properties
- High chemical resistance to most solvents and acids, organics, and inorganics
- Very high abrasion resistance to protect against heavy duty processes
- Very high load strength and wear resistance: Holds against impact, traffic and chemical attacks.
- Hygienic: Provides a seamless finish that is easy to clean and maintain

Flowfresh SL/MF

A self-smoothing, medium duty, resin floor finish with exceptional wear resistance, chemical resistance and temperature resistance up to 75°C.

Typical thickness: 2 to 3 mm

Application Areas:

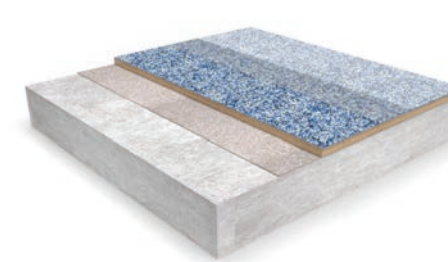
- Wet and dry process environment
- Suitable for heavy vehicle traffic
- Production & storage areas
- Cleanrooms and dry rooms

Benefits:

- High chemical resistance to most solvents and acids, organics, and inorganics
- Very high abrasion resistance to protect against heavy duty processes
- Very high load strength and wear resistance: Holds against impact, traffic and chemical attacks.
- Hygienic: Provides a seamless finish that is easy to clean and maintain

Specialty Systems

Unique characteristics tailored to the pharmaceutical industry's diverse applications. From robust decorative solutions like Terrazzo techniques to exceptionally flexible and comfortable options designed for intensive pedestrian traffic such as laboratories, changing rooms or offices. Rapid, decorative, and anti-slip systems are available for slightly humid areas or outdoor spaces, enhancing safety and circulation efficiency.



Flowfast BC

A hard wearing, decorative and very fast curing MMA flooring system that delivers a decorative matt finish. Flowfast BC consists of durable colour stable quartz granules encapsulated in a clear resin binder and delivers a fully trafficable surface just 60 minutes from application.*

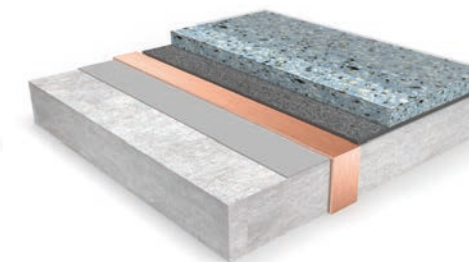
Typical thickness: 4mm

Application Areas:

- Laboratories
- Gowning rooms and Airlocks

Benefits:

- Very short downtime when installing
- Slip resistant system for high safety at work
- Attractive: Enhances the appearance of working environment



Mondeco

Mondeco is a decorative epoxy terrazzo floor finish containing granite and flint aggregates. Providing a highly resistant surface, this system is suitable for use in pharmaceutical production areas as well as in the healthcare industry, where hygiene and durability are of key concern.

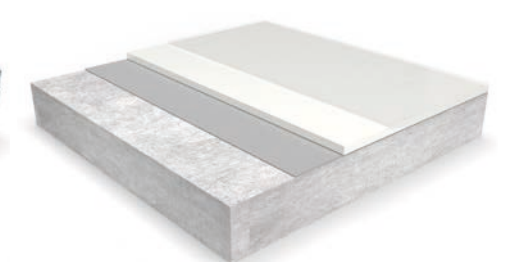
Typical thickness: 7 to 8 mm

Application Areas:

- Production areas

Benefits:

- Very robust for high traffic and accidental impact, with falling heavy object
- High aesthetics for heterogeneous surface finishing
- Easy maintenance as Terrazzo may be regenerated



Peran Comfort

A matt, self-smoothing flexible polyurethane resin floor finish, Peran Comfort has enhanced resistance to UV light and offers sound dampening properties. Ideal for a minimalist, modern, and contemporary environment and areas with intensive pedestrian traffic such as offices.

Typical thickness: 2 to 3 mm

Application Areas:

- Administrative areas

Benefits:

- Warm and comfortable for a good feeling under the foot
- Reduce staff fatigue, absorb energy and reduce injury associated with fall.
- The floor stops the echoing disturbing noise of footsteps due to its soft elastic behaviour. This makes it the perfect floor for working, healing or residing areas
- Elastic material that take deformation instead of destruction
- Suitable for furniture castors

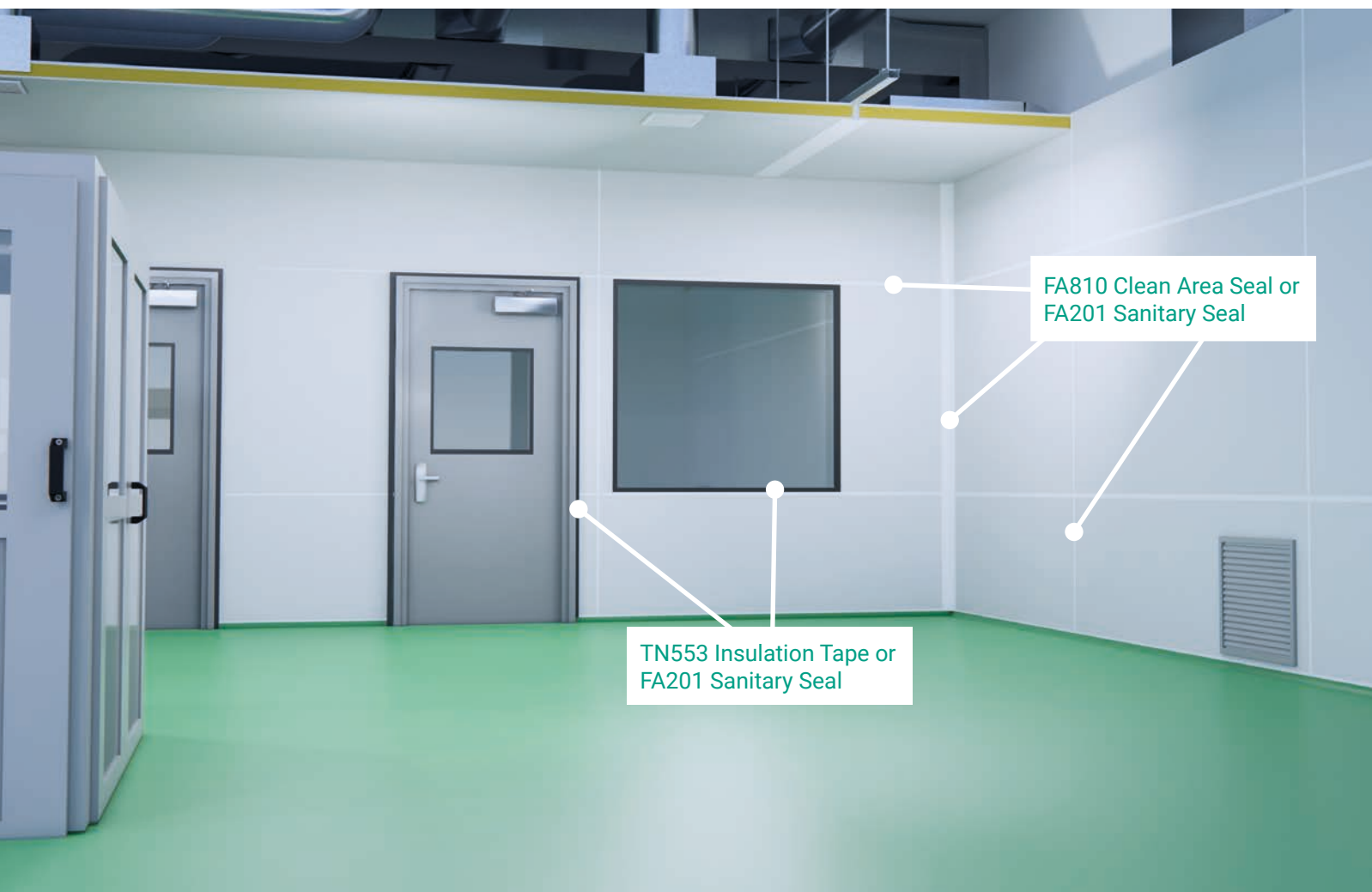
JOINT SEALING

For the interior fit-out of pharmaceutical environments durable, low VOC and chemical resistant joint sealing are key. Our range of sealing products for horizontal and vertical joints on coplanar surfaces create reliable impermeability against air and water for:

- HPL and metal panel systems
- Wall/floor connection profiles
- Suspended ceiling components
- Interior windows and doors
- Laboratory service modules, cabinets, sinks
- Cleanroom technology stainless steel/glass housings

Product Highlights

- Biological and chemical resistant.
- Excellent cleanability, FDA compliant and CE-marked
- Prevalent colours
- Different pack sizes (310-600ml) incl. more sustainable foil packs



FA810 Clean Area Seal

One-component, gun-grade, neutral curing, medium modulus silicone sealant.

Benefits:

- FDA 21§CFR177.2600 compliant
- CE-marked EN15651-1 F-EXT-INT-CC
- Facilitates cleanliness through high resistance to cleaning agents and disinfectants
- Temperature resistant up to 180°C
- Excellent tooling and adhesion
- Also available in stainless steel colour



FA201 Sanitary Seal

One-component, low odour, neutral curing, low modulus silicone sealant.

Benefits:

- FDA 21§CFR177.2600 compliant
- CE-marked EN15651-1 /-2/ -3
- Antimicrobial
- Temperature resistant up to 150°C
- Facilitates cleanliness through good resistance to cleaning agents and disinfectants



GS202 Food & Water Seal

One-component, Acetox curing, low modulus sealant based on 100% silicone for stainless steel housings and units.

Benefits:

- FDA 21§CFR177.2600 compliant
- CE-marked EN15651-3
- Highly resistant to cleaning agents and disinfectants
- Temperature resistant up to 160°C
- Also available in stainless steel colour

FLEXIBLE SEALING & BONDING

Beside proper sealing against contamination, flexible bonding is the right choice if a reduction of mechanical fixing is required for components or substrates. Applicable areas include:

- Panels and floor connections
- Worktops
- Laboratory furniture connections
- Areas where dynamic load transfer between assembled parts is required



SP350 High Tack Pro

SP350 is a one component, non-sagging, elastic adhesive based on hybrid polymers.

- High initial grab and rapid development of final bond
- Solvent free, very low odour, and chemically neutral
- Instant grab can minimise the need for additional clamping or other mechanical supports
- Good resistance to light, weather and ageing - suitable for internal and external applications



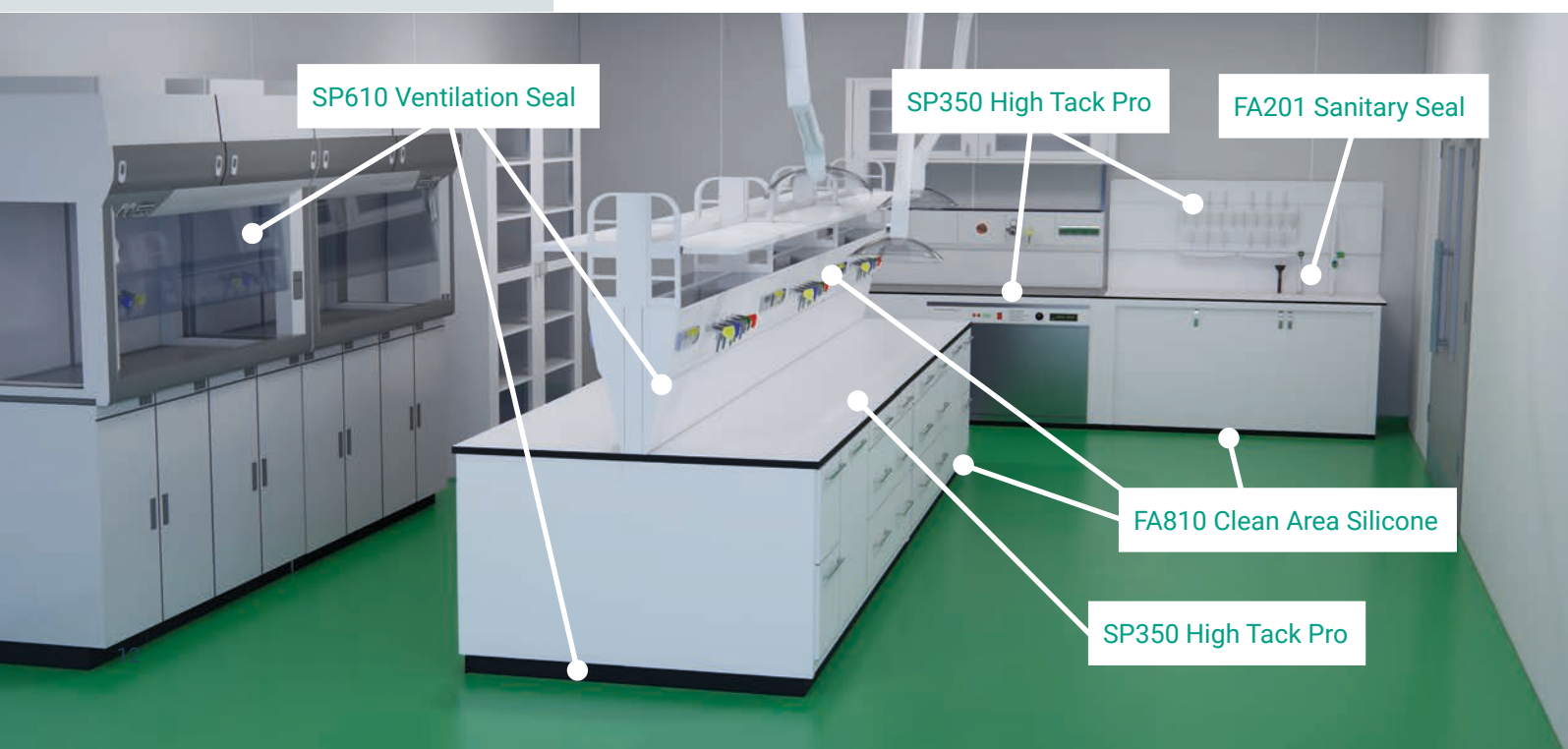
SP050 Multi Adhesive Pro

This is a multi-purpose sealant and adhesive based on illbruck's advanced SP polymer formulation.

- A more environmentally friendly alternative to traditional polyurethane adhesives - does not contain solvents or isocyanates and is very low odour
- Excellent adhesion to a wide range of materials including metals, glass, PVC and concrete
- Tack free in less than 30 minutes

Product Highlights

Our range of adhesives and sealants offer high performance solutions to support dynamic load transfer of equal or dissimilar building materials, e.g.: dynamic bonding of metal sheets and construction panels



HVAC SEALING & BONDING

Air-handling units and components require airtightness, decoupling against vibration and must comply to hygienic requirements to operate reliably for a long period of time. In addition, some construction details could require the reduction of mechanical fixings.

- Sealing/Decoupling: Modular component connections, condensation units, ventilation units, heat-exchanger, ducting
- High temperature sealing: heating systems
- Dynamic bonding: housing components, panels

Product Highlights

Certified, proven hygienic and airtight decoupling sealing solutions. Optional high temperature resistant sealants are available for temperatures up to 300°C

SP610 Ventilation Seal

TN553 Sealing Tape



SP610 Ventilation Seal

Gun grade sealant based on illbruck hybrid technology for silicone free sealing in hygienically controlled environments.

- Wide adhesion spectrum, bonds to a wide range of metal, ceramic, plastic substrates - often without the need for primer
- Highly flexible, reduced risk of adhesion failure when subject to stresses caused by metal duct expansion and contraction
- Low VOC, silicone, isocyanate and solvent free with low odour
- Meets requirements of EN ISO 846 (Method A & C) and VDI 6022 (Ventilation & Air Conditioning)

TN553 Sealing Tape

Self-adhesive PVC foam tape with pressure sensitive acrylic adhesive, supplied on an easy to use roll.

- Highly conformable grade of tape that easily accommodates rough or uneven joint surfaces
- Excellent insulation performance against shock, vibration and movement
- Meets requirements of EN ISO 846 (Method A & C) and VDI 6022 (Ventilation & Air Conditioning)



Product Highlights

Our comprehensive range of fire stopping solutions come together with the technical advice and expertise.



FB750 Coated Batt

Lightweight fire barrier comprising of a rock mineral fibre board with an uniquely identifiable ablative coating.

- Up to 4 hours fire resistance - Tested to EN 1366-3 and BS 476 Pt 20/22
- Optifire® unique traceability identifier
- Acoustic & smoke sealing
- Airtight up to 600 Pa
- Suitable for use in flexible & rigid walls, rigid floors



FS702 Fire Resistant Acrylic Sealant

Water-based acrylic sealant which cures to give a firm but flexible fire seal.

- Up to 4 hours fire resistance - Tested to EN 1366-4, EN 1366-3
- Up to 30% movement capability (during fire test)
- Suitable for flexible walls and rigid walls & floors
- Acoustics up to 55 dB
- Airtight up to 600 Pa



FP170 Pipe Collar

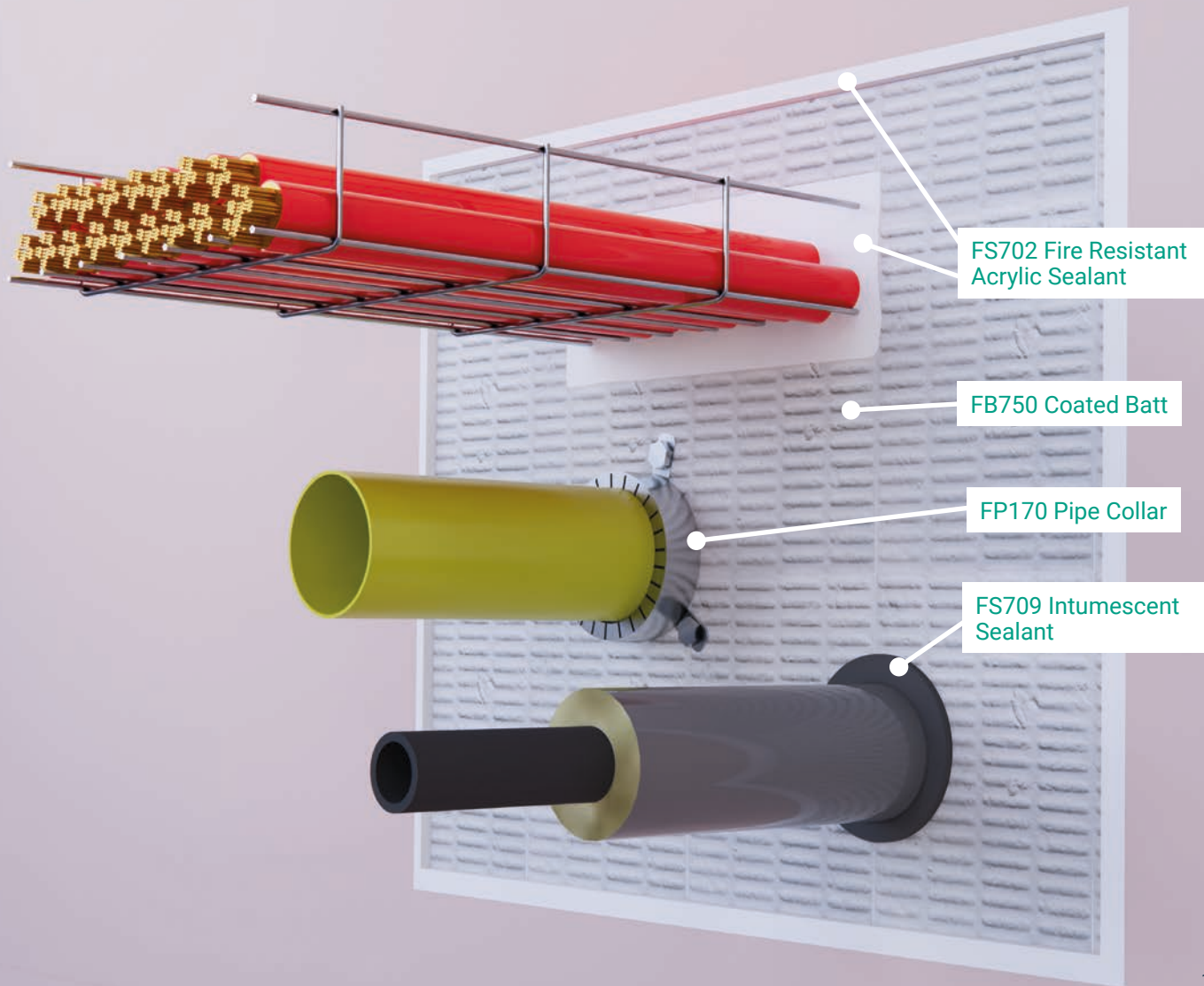
Comprises of a stainless steel shell and a reactive intumescent lining.

- Up to 4 hours fire resistance - Tested to EN 1366-3
- Tested for use with combustible pipes, insulated non-combustible pipes, cable bundles and Bevex pipes
- Suitable on flexible rigid walls, rigid floors
- Easy to install

FIRE STOPPING

In the event of a fire in a building, and especially if the fire stop is insufficient, the fire and smoke spread very quickly through the building. Fire Stopping products prevent the spread of flames, heat and smoke. The rest of the building will be safe and will allow safe evacuation and recovery.

Nullifire product range offers products, systems and solutions for all fire stopping needs for linear joints and service penetrations (combustible, non combustible, electrical, etc.) on walls and floors.



REFERENCES

Products and solutions from Tremco CPG Europe have been used in countless construction projects across the globe. Explore some of them here.

FRIEDRICH SCHILLER UNIVERSITY JENA,
INSTITUTE FOR INORGANIC AND ANALYTICAL
CHEMISTRY, GERMANY

illbruck sealing and bonding solutions for clean areas.

Hygienic and chemically resistant sealing of base joints and countertop joints. Silicone-free sealing of fume cupboards.



Image Source:
Waldner Laboreinrichtungen SE & Co. KG, Germany

SAFFRON
PHARMACEUTICALS
Flowshield SL

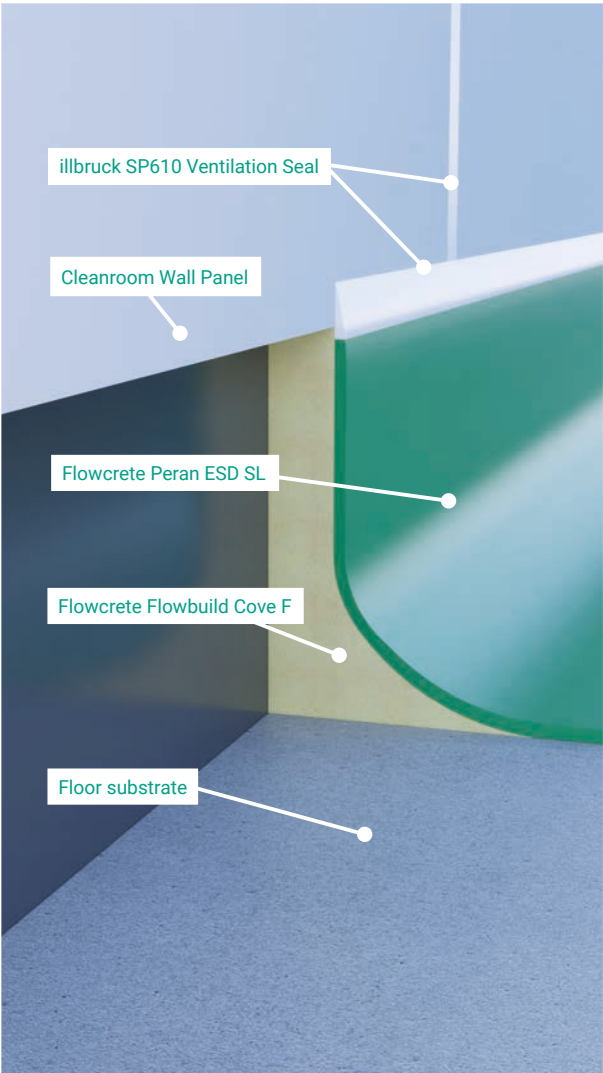
ASPEN PHARMACARE,
SOUTH AFRICA
Pharmaceutical Manufacturing
Flooring: Flowcoat SF41, Flowfast



SELECTOR FOR SEALING, BONDING AND FLOORING

illbruck	Joint sealing : air-/watertight, elastic, resistant, durable, cleanable, low VOC, decorative			Dynamic Bonding: strong, flexible				
	Silicones			Silicone-free				
	FA810 Clean Area Seal	FA201 Sanitary Seal	GS202 Food & Water Seal	SP540 Floor Joint Seal	SP610 Ventilation Seal	TN553 Insulating Tape	SP050 Multi Adhesive Pro	SP350 High Tack Pro
Type	Sealant	Sealant	Sealant	Sealant	Sealant	Sealing Tape (PVC-foam)	Construction Adhesive	Construction Adhesive
Curing technology	Neutral	Neutral	Acetoxxy	Neutral, hybrid	Neutral, hybrid	Cross-linked	Neutral, hybrid	Neutral, hybrid
Resistant to common disinfection methods	yes	yes	yes	yes	yes	n.a.	n.a.	n.a.
Biological resistant (ISO 846 A+C)	yes	yes	-	yes	yes	yes	n.a.	n.a.
FDA conform	§177.2600 (e)	§177.2600 (e)	§177.2600 (e)	-	-	-	n.a.	n.a.
VOC	EC2, A+	EC1, A+	EC1+, A+	EC1+, A+	EC1+, A+	n.a.	EC1+, A+	EC1+, A+
EN 15651-	F-EXT-INT-CC	F-EXT-INT-CC G-CC XS1	XS2	F-EXT-INT-CC PW-EXT-INT-CC	F-EXT-INT-CC XS1	n.a.	n.a.	n.a.
Reaction to fire (EN 13501-1 DIN 4102)	E B2	E B2	E B2	E B2	E B2	E B2	E B2	E B2
EPD	available	available	available	available	available	-	available	available

Flowcrete	Smooth & Decorative			Functional			Specialties		
	Flowcoat SF41 LE	Peran SL	Peran STB Compact	Peran ESD SL	Flowfresh ESD SL	Flowfresh SL / MF	Flowfast Quartz	Mondeco	Peran Comfort
Solvent storage	--	--	--	●	●●●	--	--	--	--
Chemical and equipment storage area	●●●	●	●	●	●●●	●●●	●	●	●
Dry production areas	●	●●●	●●	●●●	●●●	●●●	●●●	●●●	--
Wet production areas	--	--	●	--	●	●●●	●●●	●	--
Laboratories	●●	●●●	●●●	●●●	●●	●●	●●	●●●	●
Maintenance	●	●	●●●	●	●●	●●●	●●●	●	●
ATEX rooms	--	--	--	●●●	●●●	--	--	--	--
Administrative area, Offices	●●	●●	●●	●	●	●	●●	●●●	●●●
Locker Change room	●	●●	●	●	●	●	●	●●	●●●
Warehouse	●●●	●	●●●	●	●	●	●●●	●	--
Packaging	●●●	●●●	●●●	●●●	●●●	●●●	●●	●●●	●●●
●●● Very suitable ●● Suitable ● May be suitable under specific condition: Contact our Tremco CPG technical service -- Not suitable									



By your side ●

*Find out more, visit:
www.tremcocpg.eu*

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