BRUCHAPaneel®

Surfacing

# Surfacing | Coatings on Galvanized Steel

for cold storage construction
and temperature regulated rooms

BRUCHA®

# ... everything from a single source – from initial approaches to completion of your projects

## Precision Planning

Rising product quality demands require competent and precise project planning. Our engineers develop tailored solutions in consultation with our customers.

## Broad Portfolio

BRUCHA provides everything for your fresh storage area at the state of the art. Cold rooms, €CO-Box, deep freeze rooms, CA / ULO storage, clean rooms, cold storage doors and gates.

## Versatile Application

Application of products in cold-storage or clean environments; BRUCHA is your competent partner wherever hygienic requirements with special surfacing are highest.

## Custom Production

Individual solutions for our customers can be quickly and efficiently designed and produced on modern manufacturing plant.

## Competent Assembly

Your cold storage project is precision-installed or erected on site by the trained and experienced BRUCHA Assembly Team. Particular sections may also be economically restructured if necessary.

## Flexible Service

Our services go far beyond consulting, planning, delivery and assembly. Your project manager is available for surface maintenance and servicing questions.

## Certified Quality

VKF AEAI

ASSOCIATION OF CANTONAL FIRE INSURANCE INSTITUTIONS (VEREINIGUNG KANTONALER FEUERVERSICHERUNGEN) - Bern
Swiss fire-protection approval

LPCB – Loss Prevention Certification Board

LOSS PREVENTION CERTIFICATION BOARD
Great Britain

DIBt

Deutsches Institut für Bautechnik
Berlin

Member of:

IFBS Industrieverband für Bausysteme im Metallleichtbau

IPA Fraunhofer TESTED® DEVICE
BRUCHA Blechbeschichtungen
Report No. BR 0605-350

www.ipa.fraunhofer.de

## FM APPROVED

BRUCHA is the first European panel manufacturer to have all PU/PIR and fire-protection panels in all core thicknesses tested by FM Approvals.

FM approved construction products are tested to the same standards globally and fulfill the highest safety and minimized probability of failure requirements.

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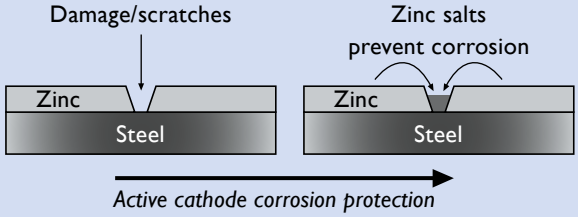
# Selecting
# The Right Surface Coating

BRUCHA exclusively uses 280 to 320 grade steel for the base material enhanced by immersion melting. The following coatings and surfacings are used by BRUCHA:

- **BRUCHA Polyester PURE 25 µm**
- **Polyester 25 µm**
- **TTHD 60 µm**
- **Film 150 µm**
- **PVDF 25 µm**
- **Polyurethane 25 µm**
- **Polyurethane-Polyamide 50 µm**
- **Polyester-Polyamide 25 µm**
- **Plastisol**
- **Stainless steel V2A Standard**
- **Stainless steel V4A Superior**
- **Glasbord®**

*Note:*
The purpose of the building is always to be considered when selecting the surface coating, particularly for storage of open semi-finished products or spices (salt, etc...).

# Cathode protection




If the zinc coating on panel surface is damaged, exposing the steel core, the addition of water will create a galvanic element.
The resulting electrical differential dissolves the zinc, releasing zinc ions in the process which attach to the steel surface providing corrosion protection. Cathode corrosion protection takes place when the metals **zinc** and **steel** are electrolytically connected through the presence of sufficient moisture such as from rain or even humidity.
The steel is then protected at any point without a coating (scratches, cuts, holes etc.), as electronsootection solutionsrssemi-finished products orulfill the requitrements of every will move from zinc to steel and the dissolved zinc forms a protective coating over the steel.
This is referred to as a **"sacrificial anode"**.
Cathode protection is a result of the laws of physics, however this simple effect between zinc and steel means that minor damage does not lead to major problems with all the additional repair costs.

## Notes on Environmentalism

The polyurethane core of BRUCHAPaneel PU/PIR panels is absolutely CFC and HFC FREE! The fully hardened polyurethane core is medically and environmentally harmless, emission free, and safe to handle; its energy saving insulation characteristics also contribute to reducing CO2 emissions.


## Environmental Protection – Health & Safety

Developing a sustainable future-proof environmentally friendly product is the duty of our company for coming generations, which is why we continuously have our products tested by authorized institutes for environmental compatibility, fire resistance characteristics, durability etc.

## CONTENTS:



**Thermal building cleaning project.** With this project BRUCHA relieves the environment annually of 426.30 metric tonnes of CO2 and makes a lasting contribution to climate and environmental protection in Austria, BRUCHA receiving the certificate from the federal ministry.

lebensministerium.at

# Coatings – performance comparison

| *Chemical and mechanical durability* | BRUCHA Polyester PURE 25 µm | Polyester 25 µm | TTHD 60 µm | Film 150 µm | PVDF 25 µm | Polyurethane 25 µm | Polyurethane-Polyamide 50 µm | Polyester-Polyamide 25 µm | Plastisol |
|---|---|---|---|---|---|---|---|---|---|
| Chemical durability | *** | ** | *** | **** | *** | *** | **** | *** | **** |
| UV durability | ** | * | *** | * | **** | ** | **** | ** | *** |
| Durability under impact deformation | **** | *** | **** | **** | *** | *** | *** | *** | *** |
| Durability under gradual mechanical deformation | ** | * | *** | **** | *** | *** | *** | **** | **** |
| Fracturing resistance under bending | **** | *** | **** | **** | **** | *** | *** | *** | *** |
| Corrosion resistance | *** | ** | **** | **** | *** | *** | **** | *** | **** |
| Scratch resistance | ** | * | **** | *** | *** | ** | ** | ** | *** |
| Abrasive hardness | ** | * | **** | *** | *** | * | * | *** | *** |
| Buchholz hardness | *** | ** | ** | **** | *** | * | ** | ** | *** |
| Characteristics/benefits | Excellent plasticity/ good color durability/clean room compatible in white only | Good plasticity/bending/rolled profiling/good color durability | Good plasticity/bending/rolled profiling/good color durability | Excellent abrasive resistance, bending/roller profiling/ in white only | Excellent plasticity/bending/ roller profiling/good color durability | Very good plasticity/profiling | Good plasticity and surface hardness | Good plasticity and surface hardness | Excellent abrasive resistance, outstanding plasticity, good heat resistance |
| Areas of application | External roof/wall, internal cold-storage, clean rooms, test chambers, CA storage | External roof/wall, internal cold-storage | External roof/wall | Only internal foodstuffs processing areas | External roof/wall and dry internal rooms | External roof/wall | External roof/wall | External roof/wall | External roof/wall |

The quality characteristics are based on detailed test results from the ofi Technologie & Innovation GmbH.
Quality: ****very good | ***good | **satisfactory | *adequate/limited

# Test results – chemical and cleaning agent durability

| Coating | Polyester 25 µm | | | | TTHD 60 µm | | | | Film 150 µm | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Room temperature | | 50°C | | Room temperature | | 50°C | | Room temperature | | 50°C | |
| *With/without scratches* | *without* | *with* | *without* | *with* | *without* | *with* | *without* | *with* | *without* | *with* | *without* | *with* |
| Cleaning agents "Supergel 3 %" | ++++ | ++++ | +++++ | +++++ | ++++ | ++++ | ++++ | ++++ | +++++ | +++++ | +++++ | +++++ |
| Cleaning agents "Acigel 3 %" | ++++ | ++++ | +++++ | +++++ | ++++ | ++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ |
| Cleaning agents "Booster 1,4 %" | +++++ | + | ++++ | + | +++ | ++++ | +++ | + | +++++ | +++++ | +++++ | +++++ |
| Cleaning agents "Endurochlor 3 %" | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ |
| Hexan | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ |
| Toluol | +++ | +++ | +++++ | +++++ | +++ | +++ | +++++ | +++++ | +++ | +++ | +++ | +++ |
| Ethyl alcohol, 96 % | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ |
| Aceton | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++++ | +++ | +++ | +++ | +++ |
| Hydrochloric acid, 5 % | +++ | + | +++ | + | ++++ | + | ++++ | + | +++++ | + | +++++ | + |
| Hydrochloric acid, 2 % | +++++ | + | +++ | + | ++++ | + | ++++ | + | +++++ | +++++ | +++++ | +++++ |
| Sodium hypochlorite solution, 5 % | ++++ | ++++ | ++++ | ++++ | +++++ | +++++ | ++++ | ++++ | +++++ | +++++ | +++++ | +++++ |
| Sodium hypochlorite solution, 2 % | ++++ | ++++ | ++++ | ++++ | +++++ | +++++ | ++++ | ++++ | +++++ | +++++ | +++++ | +++++ |
| Sodium hydroxide solution, 5 % | ++ | ++ | ++ | ++ | ++++ | ++++ | ++++ | ++++ | +++++ | +++++ | +++++ | +++++ |
| Sodium hydroxide solution, 2 % | ++++ | ++++ | ++++ | ++++ | ++++ | ++++ | ++++ | ++++ | +++++ | +++++ | +++++ | +++++ |
| Hydrogen peroxide, 5 % | +++ | + | +++ | + | +++ | + | +++ | + | +++++ | + | +++++ | +++++ |
| Hydrogen peroxide, 2 % | ++++ | + | +++ | + | +++ | + | +++ | + | +++++ | + | +++++ | +++++ |
| Nitric acid, 5 % | +++ | + | +++ | + | +++ | + | +++ | + | +++++ | + | +++++ | +++++ |
| Nitric acid, 2 % | +++ | + | +++ | + | +++ | + | +++++ | + | +++++ | + | +++++ | + |
| Phosphoric acid, 5 % | ++++ | + | +++ | + | ++++ | + | ++++ | + | +++++ | + | +++++ | +++++ |
| Phosphoric acid, 2 % | ++++ | + | +++ | + | +++++ | + | +++ | +++ | +++++ | +++++ | +++++ | +++++ |

+++++ no effect | ++++ discoloration/desheening | +++ bubbling/wrinkling | ++ peeling | + creeping

# Maintaining product quality from delivery to servicing of your construction project



## Optimal design

When planning and designing the cold-rooms is should be noted that these must be regularly and thoroughly cleaned; it is therefore important to **avoid hollows** where dirt or condensation can collect.

**BRUCHA**Paneel panels provide an optically aesthetic surface profiling enabling thorough cleaning. During assembly ensure that all fixtures & fittings have a **rounded form** to also enable thorough cleaning.

The **lower panel end** must be protected by a correctly **sealed pedestal** to prevent damp penetrating through the panel.

If it is necessary to cut or drill into the panel walls, we recommend using special shears to avoid burrs.

In particularly aggressive environments the **cut edges** must be **sealed** with a **protective paint** or **covered** with a **folded stainless steel insert** to prevent possible corrosion.

**No swarf, screws, rivets** etc. may be left lying on the panels (risk of corrosion, particularly for roof assembly).
Use only silicon seals with neutral curing - no putty with acetic acid curing. Silicon joints require maintenance!

## Cleaning for permanent product quality

Proper cleaning not only ensures the best appearance but also removes microorganisms providing microbiological cleanliness through disinfection.

Here we provide recommendations and guidelines for proper surface cleaning from our own suppliers:

Coated surfaces should be cleaned using cold or tepid water with mildly alkaline cleaning agent without however oxidizing agents (e.g. chlorine). **Surfaces may only be in contact with cleaning agents for a maximum of 30 minutes. Cleaned surfaces** are to be **rinsed with cold water** (not high pressure), so that no residue remains on the coating; the cleaned surfaces must be able to thoroughly dry out.

Cleaning agents containing **high levels of chlorine or phosphoric acid**, or perhydrol and oxygen based disinfectants are **not** to be **used**.

Cleaning agents with **corrosion inhibitors** are recommended.

**Abrasives,** brushes, or soiled sponges are **never to be used** due to possible scratching. The manufacturer's details on dilution of cleaning agents must be observed precisely.

The permissible **pH-values** for **25 µm Polyester coatings** are generally from **5 to 9** (in reference to EN 10169-3).

Values must be maintained within these parameters; exception: 150 µm PVC film (hard-PVC-film) from pH 5 to pH 10.

Particular caution is advised when using high pressure or steam cleaning equipment.

In individual cases consult the manufacturer before application; the cleaning agent supplier can inform you on the most efficient hygienic/disinfectant composition.

# Long Lifetime – Tips on appropriate care

## Continuous maintenance

Inspect the panel surfaces regularly, visible damage (scratches etc.) should be touched up with paint.
If necessary wipe the damaged area with a clean towel to remove any foreign bodies. Apply the touch-up paint precisely with a fine brush.
Only use touch-up paints which are compatible with the original paint.

Please contact us for details, we will be pleased to offer advice.

## IPA Qualification

Foodstuffs safety
Test seal for clean room compatibility

The sheet surfaces used by BRUCHA have been tested for clean room compatibility at the Fraunhofer Institute for Manufacturing Engineering and Automation IPA in Stuttgart, receiving the IPA seal of qualification.

## Recommended Cleaning Agents

IPA investigation of the cleaning agent and disinfectant durability and solvent emission characteristics of coated steel (polyester and PVC):
The following commercially available agents for the foodstuffs industry were used for the reagent durability simulation; result **chemically resistant** after 24 hours exposure.

**MICROBAC® food** and **DESIFOR-forte**

## Summary

### Notes on finishing, cleaning, and servicing & maintenance of the panel surfaces.

*Finishing:*

- ✓ Hollows must be avoided and all corners should be rounded off (inserts).
- ✓ Complete sealing of the lower panel end.
- ✓ Open cut outs are to be touched up with paint or covered with an insert.
- ✓ No swarf, screws, rivets etc. may be left lying on the panels.

*Cleaning:*

- ✓ Cleaning agents are always to be used in the manufacturer's specified concentration.
- ✓ General cleaning temperature should not exceed 30 °C (point max 50 °C).
- ✓ No active chlorine cleaning agents may be used.
- ✓ No abrasive cleaning agents may be used.
- ✓ The cleaning agent pH-value between 5 and 9 must be maintained.

*Servicing & maintenance:*

- ✓ Regular inspections for scratches, these must be immediately touched up with.
- ✓ Important here is compatibility with the original paint.

Please consult your BRUCHA point of contact for further questions on maintaining optimal product quality.

## PORTFOLIO

Consulting, planning, construction, production & assembly:

- Cold rooms and freezers: Professional cell €CO-Box – simple self-assembly*
- **BRUCHA**Paneel PU/PIR panel for industrial cold storage construction*
- **BRUCHA**Paneel PU/PIR panel for industrial halls construction*
- **BRUCHA**Paneel fire-protection panel, with mineral fiber for roof, wall and facade*
- **BRUCHA**Paneel Solidboard® panel
- Test chambers
- Welded stainless steel floors 4301-V2A
- Welded stainless steel walls 4301-V2A
- Crash barriers in stainless steel or plastic
- Refrigerated and freezer room doors*
- Hinged and sliding doors*
- Swing doors and strip curtains
- Special constructions such as CA storerooms, conditioned and climatised rooms, cold-smoking rooms, labs and test rooms, flash-freezing rooms
- Clean room construction*
- High-rise warehouses
- Custom constructions on request
- **BRUCHA**Paneel Acoustic – WP-A panel*
- **BRUCHA**Paneel PU/PIR €CO-Roof panel*
- **BRUCHA**Paneel PU/PIR Transparent Roofing Sheets – DP-L panel*

* For further details please request a copy of our special folder.

**www.brucha.com**

Quality management
Norm: ISO 9001:2008

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en_09/2011

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