

FILLING PRODUCTS

CHEMOTECHNISCHE FABRIK E.K. · GÖRLITZ, GERMANY

EXCLUSIVE INDIA REPRESENTATIVE

Project Sales Corporation

GENERAL AGENCY · SALES AREA OF INDIA

OFFICIAL MARKET LAUNCH · INDIA 2026

High-Performance *Sealing Technology* for India

Introducing FILLING basic®, FILLING 1000® and FILLING 2000® — advanced single-component sealing compounds engineered for steam turbines, gas turbines, turbosets and all critical metallic joint applications. Certified halogen-free, sulphur-free, and approved by Siemens and GE (Alstom).

FILLING basic®

FILLING 1000®

FILLING 2000®

950°C

TEMPERATURE
RESISTANCE

275 bar

SPLIT JOINT
PRESSURE

670 bar

THREADED
JOINTS

10 yr

GUARANTEED
SERVICE LIFE

DIN EN

ISO 9001
CERTIFIED

PRODUCT RANGE

Three Products. *One System.*

All three products are single-component sealing materials in paste form. Only the combined use of FILLING basic® with FILLING 1000® or FILLING 2000® guarantees the desired sealing quality on split joints and cut surfaces. All products are **dark brown**, do not cure, and can be subjected to full workloads **immediately** upon application — no waiting time.

FILLING BASIC® · FILLING 1000® · FILLING 2000® — 1 KG & 0.75 KG TINS

FILLING basic® SURFACE SEALING COMPOUND	FILLING 1000® CAVITY REPAIR COMPOUND	FILLING 2000® HEAVY REPAIR COMPOUND
MAX SURFACE DAMAGE DEPTH ≤ 0.2 mm SURFACE FINISH (RA) 0.8 – 1.2 µm APPLICATION METHOD Brush or putty knife, both sides LAYER THICKNESS 0.2 – 0.3 mm HYDROSTATIC TESTING Not Suitable For smooth, lightly worn or post-machined surfaces. Full surface coverage. 1 kg covers 0.50–0.60 m²	MAX SURFACE DAMAGE DEPTH ≤ 0.5 mm SURFACE FINISH (RA) 0.8 – 1.2 µm APPLICATION METHOD Putty knife with force LAYER THICKNESS 0.2 – 0.8 mm HYDROSTATIC TESTING Suitable ✓ For localised pitting, corrosion and erosion. Eliminates machining in most cases. 750 g covers 0.35–0.45 m²	MAX SURFACE DAMAGE DEPTH ≤ 1.0 mm SURFACE FINISH (RA) 0.8 – 1.2 µm APPLICATION METHOD Putty knife, spot application LAYER THICKNESS 0.2 – 1.3 mm (heat req.) HYDROSTATIC TESTING Suitable ✓ For severe damage, deep erosion cavities. Spot application on affected areas. 750 g covers 0.25–0.35 m²
Siemens No. 5-5510-0003-00	Siemens No. 5-5510-0003-01	Siemens No. 5-5510-0003-02
GE / Alstom Part HTC2655929P0002	GE / Alstom Part HTC2655929P0003	GE / Alstom Part HTC2655929P0004

MANUFACTURER GUARANTEES — ALL PRODUCTS

950°C TEMPERATURE RESISTANCE STEAM · AIR · WATER · OILS · GAS	275 bar SEALING SURFACES & BUTT JOINTS	570 bar FLANGES WITHOUT SEALING RINGS	670 bar THREADED / SCREW JOINTS	10 yr SERVICE LIFE MACHINED SURFACES	WHC I WATER HAZARD CLASS NON- HAZARDOUS
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⚠ CRITICAL COMPATIBILITY RULE

FILLING 1000® and FILLING 2000® may not be mixed with anything. FILLING® products are fully compatible only with each other. BIRKOSIT® must NOT be used together with any FILLING® product in the same application. If FILLING 1000® or 2000® is used for spot treatment, FILLING basic® must be used for the remaining surface — not BIRKOSIT®.

WHY SEALING CHEMISTRY IS SAFETY-CRITICAL

The Hidden
Corrosion Risk

Turbine components operate under extreme pressures, temperatures and cyclic stresses. Sealing compounds containing halogens or sulphur compounds are **particularly dangerous** under these conditions — they release reactive species that penetrate metal grain boundaries and initiate stress corrosion cracking (SCC). The damage is self-reinforcing and **remains hidden until catastrophic failure or forced shutdown**.

Selecting the right sealing compound is therefore not a procurement decision — it is an engineering decision with direct consequences for plant safety, operational availability and long-term maintenance cost.



Chemical Attack

Halogens penetrate metal grain boundaries and initiate stress corrosion cracking (SCC)



Thermal Amplification

High temperature accelerates halogen and sulphur damage — often irreversible after onset



Hidden Damage

Corrosion remains invisible until catastrophic failure or forced emergency shutdown occurs



The Requirement

Sealing materials must be chemically neutral, halogen-free and sulphur-free by design

BIRKOSIT® VS FILLING® FAMILY — FULL COMPARISON

FILLING® products are the next-generation evolution of BIRKOSIT® — same chemical safety philosophy, extended temperature/pressure performance and the ability to compensate deeper surface damage.

PROPERTY	BIRKOSIT®	FILLING BASIC®	FILLING 1000®	FILLING 2000®
Temperature resistance	900°C	950°C	950°C	950°C
Pressure — split joints	250 bar	275 bar	275 bar	275 bar
Max damage depth	≤ 0.2 mm	≤ 0.2 mm	≤ 0.5 mm	≤ 1.0 mm
Service life	10 years	10 years	10 years	10 years
Hydrostatic testing	Not suitable	Not suitable	Suitable ✓	Suitable ✓
Halogen-free	Yes ✓	Yes ✓	Yes ✓	Yes ✓
Sulphur-free	Yes ✓	Yes ✓	Yes ✓	Yes ✓
Hazardous substance	No (WHC 1)	No (WHC 1)	No (WHC 1)	No (WHC 1)
Mix with other products	Not with FILLING®	FILLING only ✓	FILLING only ✓	FILLING only ✓
Shelf life (closed / opened)	5 yr / 3 yr	5 yr / 3 yr	5 yr / 3 yr	5 yr / 3 yr

MACHINING VS SEALING COMPOUND — WHEN TO USE EACH

PARAMETER	MACHINING	FILLING® SEALING COMPOUND	WHY IT MATTERS
Setup time	2–5 days	Under 4 hours	Direct impact on outage duration and revenue loss
Shutdown extension	Frequent	Minimal	Predictable schedule, easier resource planning
Material removal risk	High	None	Preserves original tolerances and casing geometry
Operational readiness	Delayed	Immediate	No curing — turbine can start immediately after assembly

GUARANTEED 100% SEALING PERFORMANCE

Turbine Applications

When all requirements of the application guidelines are satisfied, 100% sealing of turbine split joints is guaranteed at the temperature and pressure values stated in the product documentation, on steam turbines, gas turbines and turbosets.

HPT — HIGH PRESSURE

Two sealing strips, continuous sealing surface. Inner strip is the load-bearing strip. Ra limit: 30–50 µm to seal split joints.

MPT / LPT — MED / LOW

Continuous surface with centred cylindrical holes. Inner sealing area is load-bearing up to the start of cylindrical holes.

Key Advantage

With FILLING 1000® and FILLING 2000®, **cost-intensive mechanical pre-machining is no longer necessary** — even for split joint sealing surface damage of ≥ 0.3 mm to 0.5 mm that previously required turbine half exchange and mechanical rework.

OPERATIONAL TEST REQUIREMENTS PER PRODUCT

FILLING basic®

Test must use steam, temperature and pressure.

Minimum: 80°C and 15 bar.

Cold water only is not suitable — temperature is essential for the material to become adhesive and bond permanently.

FILLING 1000® & 2000®

Test may use cold water, cold or hot air and pressure.

Minimum: 15°C and 3 bar.

Both products are suitable for hydrotests. Products remain elastic and permanently seal relevant areas.

Tests can also be conducted on steam pipes or flange joints exposed to steam, cold or hot air or pressure — and on any metallic connection subject to a combination of temperature and pressure.

PRODUCT SELECTION FRAMEWORK → STEP 1: ASSESS SURFACE · STEP 2: SELECT PRODUCT · STEP 3: APPLY

SURFACE CONDITION	GAP RANGE	PRODUCT	APPLICATION METHOD	PACK SIZE	COVERAGE	GE PART NO.
Smooth / Minor Wear	≤ 0.2 mm	FILLING basic®	Full surface	1,000 g	0.50–0.60 m²	HTCZ655929P0002
Moderate Damage (Corrosion / Erosion)	≤ 0.5 mm	FILLING 1000®	Full surface or spot	750 g	0.35–0.45 m²	HTCZ655929P0003
Severe Damage (Deep Erosion / Cavities)	≤ 1.0 mm	FILLING 2000® + basic	Spot on affected, then full surface	750 g	0.25–0.35 m²	HTCZ655929P0004

4-STEP APPLICATION PROCESS

01

GRIND SURFACES

Use vibrating sander with fibre disc (plate disc), 60–80 grit, fine. By highly qualified experts only. Alternatively: abrade the surfaces.

02

CLEAN & DEGREASE

Degrease upper and lower split joints of HPT, MPT and LPT turbines. Clean with dry cloth. Surfaces must be completely free of grease and contaminants.

03

APPLY PRODUCTS

Spot apply FILLING 2000® on deep damage (≤ 1.0 mm) → full surface FILLING 1000® (≤ 0.5 mm) → final full surface FILLING basic® (≤ 0.2 mm). Combined use guarantees required quality.

04

SEAL & START

Seal turbine halves per manufacturer specifications. Turbine may be placed under load immediately — no waiting time. No curing period required.

FILLING basic®

Apply with brush or putty knife on both sides to dry surfaces. Layer thickness: 0.2 – 0.3 mm. Full surface coverage. Can be subjected to workloads immediately.

FILLING 1000®

Apply with force using putty knife to clean, grease-free damaged surfaces. Layer: 0.2 – 0.8 mm. Optional: pre-heat quantity to 100°C to ease application.

FILLING 2000®

Apply liberally using putty knife to cleaned, grease-free damaged surfaces. Layer: 0.2 – 1.3 mm. Pre-heat to 100°C recommended. Do not mix with anything.

SIEMENS APPROVAL

Siemens Energy
Product Approval

Siemens TMI-Nr.: 431/93b

Index b · Issued 28.11.2019 · GP SPG REU FS 2 1

FILLING / Birkosit products are specified for all joints of inner casings and blade rings in fossil and nuclear (pressurised-water reactor) units. For nuclear boiling-water reactors, Filling products are specified for S-Turbine outer casing joints.

HMN &
GUDNuclear
PWRNuclear
BWR

Siemens

APPROVED PRODUCT NUMBERS · 2021 · VALID WORLDWIDE

FILLING basic®	5-5510-0003-00
FILLING 1000®	5-5510-0003-01
FILLING 2000®	5-5510-0003-02

Siemens Energy product approvals may be passed on to end customers (Siemens sites) and to sales companies for market launch purposes — permission granted by Siemens Energy Germany.

ALSTOM / GE APPROVAL

Alstom Power (GE)
Product Approval

FILLING basic® (BIRKOSIT FILLING BASIC)

Identity No.: HTCZ655929P0002 · In tins per 1 kg
Prepared: 2013-06-24 · Dept. TSGBG-E3 · Status: Approved

FILLING 1000®

Identity No.: HTCZ655929P0003 · Rev. Index A · In tins per 0.75 kg
Prepared: 2013-04-16 A. Bizzarri · Approved: L. Zantop · Status: Approved

FILLING 2000®

Identity No.: HTCZ655929P0004 · Rev. Index A · In tins per 0.75 kg
Prepared: 2013-04-16 A. Bizzarri · Approved: L. Zantop · Status: Approved

QUALITY CERTIFICATION

All FILLING PRODUCTS are certified to DIN EN ISO 9001:2008. Trademark rights are registered and secured. Product deployment verified at Siemens AG and Alstom AG (now General Electric).

CERTIFICATE VERIFYING ABSENCE OF CHEMICAL
SUBSTANCES — 02.01.2025

✓ ABSENT

Calcium
Compounds

✓ ABSENT

Fluoride



✓ ABSENT

Chloride



✓ ABSENT

Sulphur



✓ ABSENT

Lead

Not Silicon-
Based

Not a
poly(organo)siloxane.
Contains **no silicon**
components.

Not Hazardous

WHC1 — Low
hazard to waters.
Not classified as
hazardous
substance.

REACH
Compliant

Per Regulation (EC)
No **1907/2006**
amended by
Regulation (EU) No
453/2010.

INDUSTRY ACCEPTANCE IN INDIA — BIRKOSIT®
(ESTABLISHED HERITAGE)

The following organisations have evaluated and use BIRKOSIT® — the predecessor product from the same manufacturer. FILLING® products are the next-generation evolution, offering higher temperature resistance (+50°C), higher pressure resistance, and the ability to compensate surface damage up to 1.0 mm.

BHEL

POWER GENERATION

Siemens

INDIA OPERATIONS

Triveni

TURBINES

MAN Turbo

TURBOMACHINERY

Kirloskar

INDUSTRIAL

NTPC

POWER CORPORATION

NPCIL

NUCLEAR POWER CORP.

Tata Power

POWER GENERATION

STORAGE & SERVICE LIFE

10 yr

GUARANTEED
SERVICE LIFE

50k

MAX TURBINE
SERVICE HOURS

5 yr

SHELF LIFE
UNOPENED

3 yr

AFTER OPENING
RESEALED

Storage: keep sealed when not in use · ambient workshop temperature · away from direct sunlight · no refrigeration or specialist storage conditions required. The 10-year service life aligns with standard turbine major overhaul intervals.

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GENERAL AGENCY

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SOLE MANUFACTURER & DISTRIBUTOR · FILLING BASIC® · FILLING 1000® · FILLING 2000®
EXCLUSIVE REPRESENTATIVE · SALES AREA OF INDIA

ENQUIRE ABOUT FILLING PRODUCTS IN INDIA

Ready to Solve Your *Sealing Challenges?*

Whether you operate steam turbines, gas turbines, compressors, generators, expanders or industrial pumps — FILLING basic®, FILLING 1000® and FILLING 2000® offer a proven, cost-effective sealing solution backed by Siemens and GE (Alstom) approvals. Halogen-free, sulphur-free, no curing, immediate load capability. Contact our India representative today.

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