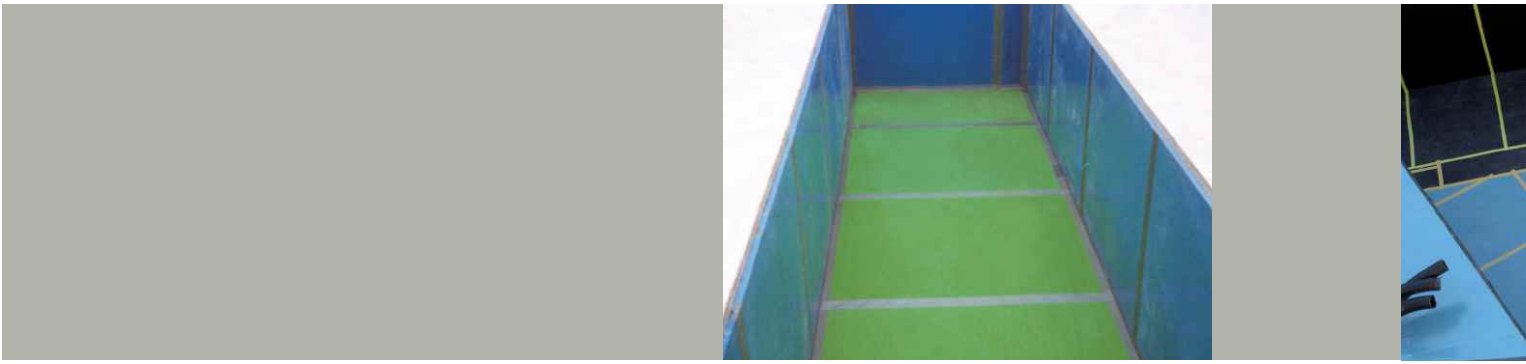


Vibration Mitigation Solutions for Power Generation with Sylomer® and Sylodyn®



» For more than 40 years Getzner offers solutions for vibration isolation for power, iron & steel, mineral processing and cement industry.



Getzner Werkstoffe provides elastic solutions for the following industrial equipment

- Turbines:
gas turbines, turbines for combined cycle power plants, hydro power turbines
- Mills and crushers:
PCI mills, ball mills, vertical roller mills (VRM), hammer mills, ring granulators
- Fans and blowers
- Boiler feed pumps
- Compressors
- Chillers & AHUs

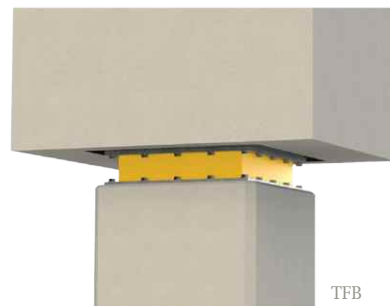
Services provided by Getzner Werkstoffe

- Development of customer-specific vibration isolation solutions:
 - development of complete isolation systems
 - selection of appropriate Sylomer®/Syldyn® material
 - design of superstructures (concrete foundation decks) in cooperation with external engineering consultants
- Supply of materials
- Installation supervision

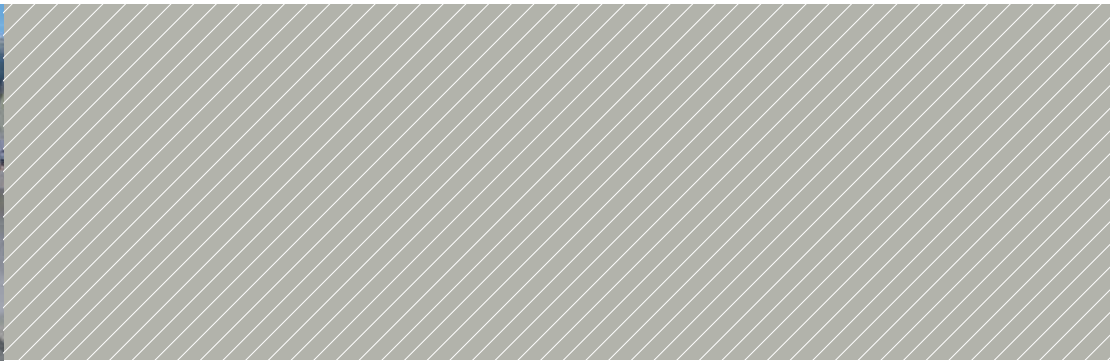
Production and engineering are both located in Bürs/Austria.

Table foundation bearing

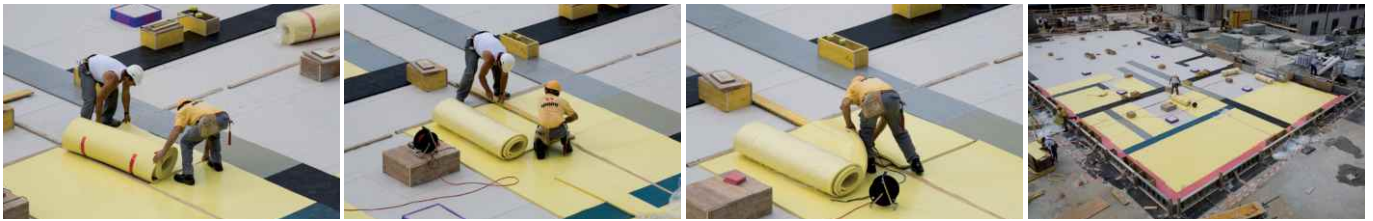
Example of elevated foundation using Table Foundation Bearing (TFB)



TFB is a specially designed solution for isolation of elevated foundations. These bearing are capable of sustaining high dynamic loads and the horizontal loads like seismic/wind loads. TFBs unique design facilitates leveling of the foundation. A brochure giving the details of TFBs is available on request.



Sylomer® and Sylodyn® solutions - High efficiency in vibration isolation combined with low implementation costs



Deep seated block foundations

Easy and fast installation

- No special equipment or staff training required
- Damping properties already included in Sylomer®/ Sylodyn® - therefore no need for additional dampers like visco dampers
- Concrete can be directly poured on Sylomer®/ Sylodyn® isolation layer

Adaption to various constructions methods

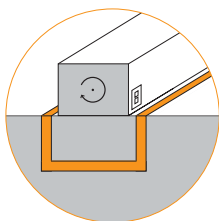
- Isolation layer can be provided in 3 configurations depending on the construction method
 - Full surface bearing
 - Strip bearing
 - Point bearing
- System can be designed for in-situ concrete construction and for construction with pre-fabricated elements

No requirements for special foundation design

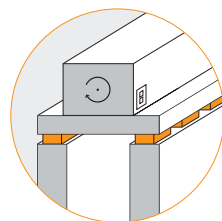
- No maintenance for the elastic layer needed
- Simple and cost-effective slab design
- Significant cost reductions especially for deep seated foundations



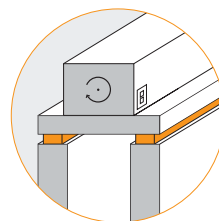
Deep-seated foundation
with full surface bearing



Elevated foundation
with Table foundation bearing (TFB)



Elevated foundation
with strip bearing



References

- Ccpp Deir Ali, Syria, gas- and steam turbine foundations
- Ccpp Melach, Austria, boiler feed pump foundation
- Hydro power plant, Kempten, Germany, turbine set
- Ccpp Ciclo del Norte, Mexico, gas turbine foundation
- Ccpp Karstrø, Norway, gas turbine foundation
- Essar Power, Salaya and Mahan TPP, India, boiler feed pump and seal air fan foundations
- GMR Energy, Raipur TPP, India, boiler feed pumps and Primary Air (PA) and Forced Draft (FD) fan foundations
- Costal Energen, Tuticorin TPP, India, boiler feed pumps

Vibration mitigation solutions by Getzner are made out of microcellular polyurethanes. Both Sylomer® and Sylodyn® materials are designed to achieve maximum isolation values at moderate implementation costs.

Sylomer® - Excellent elasticity and durability

Material characteristics

- Mixed cell construction
- Static range of use 0.011 N/mm² to 1.2 N/mm²
- Load peaks to 6.0 N/mm²
- Insignificant amplitude dependence
- Proven long-term performance
- Fatigue strength
- Optimized range of products (10 standard types) to cover the needs of calculations for systems
- Customer-specific adjustments are possible

Sylodyn® - Outstanding dynamic load bearing capacity

Material characteristics

- Closed cell construction
- Permanent static load for standard product types from 0.075 N/mm² to 1.5 N/mm², special types to 2.5 N/mm² (N80 - 1030, for specific projects)
- Load peaks to 8 N/mm²
- Insignificant amplitude dependence
- Minimal tendency to creep
- Stiffening factor from κ (C_{dyn}/C_{stat}) 1.15-1.40
- Proven long-term performance
- Fatigue strength
- Optimized range of products (5 standard types) to cover the needs of calculations for systems
- Customer-specific adjustments are possible

