



PRODUCT DATA EMSEAL BG System

For positive-side below-grade wall, blind-side formed foundation walls, and under slabs

A SIKA COMPANY



BG-0400-P shown in underslab orientation

Features

- Watertight system for positive side, below-grade wall joints
- Watertight system for blind side wall & under-slab waterproofing
- High movement
- Redundant sealing
- Double-level membrane integration flanges
- Welds to PVC or PVC-backed membranes
- Compatible with all commonly used waterproofing materials
- Redundant fastening—adhesion or welding & termination bar
- Factory-welded transitions at tees, crosses, outside and inside-90's
- Watertight transition to EMSEAL wall joints
- Watertight transition to FP plaza deck joints

Uses and Applications

Structural expansion joints in foundation and tunnel walls and slabs both in back-filled and blind side construction.

Cast concrete walls where access to the positive side is possible (back-filled conditions)

Cast concrete walls where access to the positive side is not possible after casting (lagging or single-side forming conditions)

Foundation and tunnel under-slab conditions (slab is cast onto waterproofing membrane and BG SYSTEM)

Where access to walls is possible and the joint runs through the floor slab, the BG SYSTEM would be used on the underside of the floor slab and would transition through a factory-welded outside-90 to BG SYSTEM installed into the wall joints.

At the top of foundation walls, the BG SYSTEM would transition to RoofJoint in softscapes.

Product Description

The BG System is a heavy-duty, double-celled, extruded, thermoplastic rubber gland flanked by integral side flashing flanges.

The system consists of:

- 1) Thermoplastic (heat-weldable) BG sealing insert and dual level, side flashing flanges
- 2) Termination bar and special anchors

The above components are combined in the field with a waterproofing membrane and accessories offered by the waterproofing membrane manufacturer for use in integrating the BG SYSTEM to waterproofing membranes in positive-side wall and negative-side blind forming wall and under-slab conditions.

(Note: Termination bar and anchors are optional at the discretion of the membrane manufacturer when the BG SYSTEM is fully welded into a compatible PVC or PVC-backed membrane.)

Sizes and Movement Capabilities:

Model	Joint Gap in Field	Movement Capability*
BG-0200-P	2-3 inches (50-75 mm)	2 1/2 inches (60 mm)
BG-0400-P	3-5 inches (75-125 mm)	5 inches (125 mm)

BG SYSTEM is available in two sizes for joints up to 5-inches (125mm). For larger sizes consult EMSEAL.

BG-0200 and BG-0400 represent a significant development in its BG SYSTEM product range. The BG SYSTEM is now available for use in positive side foundation wall waterproofing as well as for use in its traditional role in blind-side wall and under-slab applications.

This development comes as a result of a new extrusion featuring dual-level flanges which afford redundancy in anchoring and membrane integration. The extrusion is the same one used in EMSEAL's RoofJoint product. Consequently it can be welded continuously with RoofJoint across tunnel roofs and under soft-scaped plazas.

In hard-scaped plaza and split-slab conditions, the new BG SYSTEM glands can also be welded to the rubber sealing components (central insert and side flashing sheets) of our other FP (For Plaza) systems including MIGUTAN, SJS-FP, DSM-FP, and SJS-FP-FR to ensure continuity of seal.

Transition from below grade walls to above grade walls sealed with COLORSEAL or SEISMIC COLORSEAL is also practically achieved using the appropriate detail for this condition from EMSEAL.

*Note: For questions regarding movement in a specific condition, consult EMSEAL.

Wall and Underslab Orientation



BG-0200-P shown in underslab orientation



BG-0200-P shown in positive side wall orientation.



BG-0400-P shown in underslab orientation



BG-0400-P shown in positive side wall orientation.

Backfilled Installation

Where the construction method is to form free-standing foundation walls leaving access for installation of the waterproofing membrane from the positive (outside) of the foundation wall, the waterproofing membrane is installed up to the joint opening in accordance with the membrane-manufacturer's instructions.

The BG SYSTEM is installed into the joint. The lower flange is welded or adhered to the outside face of the membrane. Termination bars and anchors are installed over the lower flange of the BG SYSTEM extrusion to mechanically fasten the BG extrusion to the wall.

The upper flange of the BG extrusion is welded or adhered to the waterproofing membrane to encapsulate the termination bar, anchors and lower flanges. Another layer of waterproofing membrane is installed and adhered or bonded over the upper flanges of the BG SYSTEM. A protection course and/or drainage board is installed over the entire waterproofing membrane and integrated BG SYSTEM as prescribed for the application by the waterproofing membrane manufacturer and/or designer. The walls and waterproofing system are then backfilled.

Blind Side Installation

Where the structural joint extends through the foundation slab, the waterproofing membrane is installed on the ground over the mud-slab, compacted fill or gravel as prescribed by the designer or waterproofing membrane manufacturer, as well as onto the lagged walls in accordance with the waterproofing membrane manufacturer's instructions.



The BG SYSTEM sealing gland is laid over the waterproofing membrane at the centerline location of the structural expansion joint opening to be formed and cast later.

The underside of the wider of the two BG SYSTEM integration flanges are welded or adhered to the installed waterproofing membrane using accessories and methods provided by the waterproofing membrane manufacturer as tested and approved for this purpose.

Another layer of the waterproofing membrane is welded or adhered over the top of the lower BG SYSTEM integration flange and carried out to a width which is wider by at least six inches than the BG SYSTEM integration flanges.

The upper (narrower) BG SYSTEM integration flange is welded or adhered to the membrane below.

Another full width layer of waterproofing membrane is firmly, and without any voids, welded or adhered to the waterproofing membrane thereby completing a sandwich of the BG SYSTEM side flashing flanges and the waterproofing membrane.

The BG SYSTEM termination bar and anchors are installed to hold the system in place prior to pouring concrete. (*NOTE: in welded systems the termination bar and anchors may not be required—consult waterproofing membrane manufacturer.*)

A form is positioned over the belly of the BG SYSTEM extrusion and the concrete is poured over the waterproofing membrane and BG SYSTEM sandwich.

The net result is the integration of the below-grade waterproofing membrane and expansion joint system on the positive side (the side that water reaches first) of the wall or floor while ensuring that movement at the joint-gap is properly accommodated.

Termination at Footings (No joint in slab)

Where the structural joint is designed only in the walls and does not continue through the foundation slab, the BG SYSTEM is integrated into the waterproofing membrane on the walls and must terminate at the concrete footings at a point designed to be below the elevation of the slab and into a properly designed, active, perimeter drainage system. Details of flashing skirts for footing termination are available from EMSEAL.

Warranty

Standard warranties are available from EMSEAL on request.

Availability & Price

The BG System is available for domestic or international shipment. Prices are available directly from the manufacturer. The product range is continually being updated, and accordingly EMSEAL reserves the right to modify or withdraw any product without prior notice.

Test Results

Table 1: Typical Physical Properties of BG System NP Black

Properties	Result (Average)	Test Method
Tensile Strength, (psi) Die C specimens; Cond.: Min. 3h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 20 in./min;	MD = 2,320 / Std. Dev. 40	ASTM D 412
Elongation, Ultimate (%) Die C specimens; Cond.: Min. 3h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 20 in./min;	MD = 380 / Std. Dev. 20	ASTM D 412
Tensile Set, (%) Die C specimens; Cond.: Min. 3h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 20 in./min; 50% Elongation;	MD = 0.0 / Std. Dev. 0.0	ASTM D 412
Dynamic Puncture Resistance, (J) 9.8" x 9.8" specimens; Cond.: 8h @ 73±2°F; Load @ 73±2°F over Type IX EPS;	27.5	ASTM D 5635
Static Puncture Resistance, (lbf) 7.9" x 7.9" specimens; Cond.: 8h @ 73±2°F; Load for 24±0.25h @ 73±2°F; Type IX EPS;	53	ASTM D 5602
Tear Resistance, (lbf/in.) Die C specimens; Cond.: Min. 3h @ 73.4±4°F & 50±2% RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 20 in./min;	MD = 306 (Median) Std. Dev. 12	ASTM D 624
Low Temperature Bend, (Pass/Fail) 1" x 4" MD Specimens; Cond. 4h & Test @ -40±1°F; Bend 180° over 3mm Ø rod; Examine under 5x magnification;	-40	ASTM D 2136
Ozone Resistance [Pass/Fail] Static Strain 50% elongation; Test: P(O ₃)=100mPa @ 104°F; Exposure for 166h; Inspect @ 7x;	Pass	ASTM D 1149 Method B
Water Absorption (mass %) 1" x 2" specimens; Test Liquid = water; Exposure for 166h @ 158°F;	Ave. = 1.4 Std. Dev. = 0.0	ASTM D 471
Water Vapor Permeance, (Perms) Desiccant Method; Test @ 73.4±3.6°F & 50±5%RH;	Ave. = 0.04 Std. Dev. = 0.01	ASTM E 96 Proc. A
Hydrostatic Pressure Resistance, (ft of water) Mullen-Type Hydrostatic Tester; Test Condition 73.4±3.6°F & 50±5%RH;	Ave. = 982 Std. Dev. = 0	ASTM D 751 Proc. A, Proc. 1
Seam Strength, (psi) 1" x 12" across factory seam; Cond.: 24h @ 73±4°F & 50±2%RH; Test: 73.4±3.6°F & 50±2% RH; Rate = 2 in./min;	Ave. = 691 Std. Dev. = 17	ASTM D 816 Method B
Solar Reflectance, [Reading] Test Condition 73.4±3.6°F & 50±5%RH;	Ave. = 0.05 Std. Dev. = 0.00	ASTM D 1549
Thermal Emittance, [Reading] Test Condition 73.4±3.6°F & 50±5%RH;	Ave. = 0.90 Std. Dev. = 0.00	ASTM C 1371
Solar Reflectance Index (SRI)	Low Wind = -1 Med Wind = 0 High Wind = 1	ASTM D 471