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NAVFAC IGS-07920 (MAY 2002)  
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Preparing Activity: LANTNAVFACENGCOM Based on UFGS-07920N

ITALIAN GUIDE SPECIFICATIONS

Use for ITALIAN projects only

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SECTION 07920

JOINT SEALANTS

05/02

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NOTE: This guide specification is issued by the Atlantic Division, Naval Facilities Engineering Command for regional use in Italy.

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NOTE: This guide specification covers sealants for normal building construction. It must be carefully modified if resealing or sealing of an addition to an existing building is required or if conditions require use of special sealing materials and designs such as high-rise curtain wall systems.

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NOTE: On the drawings, show:

1. Joints in which each type of sealant will be used.
2. Typical scale or full-size details of sealant joints, indicating joint symbol or designation.

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Comments and suggestion on this specification are welcome and should be directed to the technical proponent of the specification. A listing of the technical proponents, including their organization designation and telephone number, is on the Internet.

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

EUROPEAN COMMITTEE FOR STANDARDIZATION (EN)

EN 26927 Building Construction - Jointing Products  
- Sealants-Vocabulary

1.2 SUBMITTALS

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NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item is required.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Recommended codes for Army projects are "RE" for Resident Engineer approval, "ED" for Engineering approval, and "AE" for Architect-Engineer approval. Codes following the "G" typically are not used for Navy projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control.

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Submit the following in accordance with section entitled "Submittal Procedures."

SD-03 Product Data

Sealants

Primers

Bond breakers

Backstops

Data for the sealants shall include shelf life, recommended cleaning solvents, and [\_\_\_\_\_].

### 1.3 ENVIRONMENTAL CONDITIONS

The ambient temperature shall be within the limits of 4 and 38 degrees C 40 and 100 degrees F when sealant is applied.

### 1.4 DELIVERY AND STORAGE

Deliver materials to the job site in unopened manufacturers' external shipping containers, with brand names, date of manufacture, [color,] and material designation clearly marked thereon. Elastomeric sealant containers shall be labeled to identify type, class, grade, and use. Carefully handle and store materials to prevent inclusion of foreign materials or subjection to sustained temperatures exceeding 38 degrees C 100 F degrees or less than 4 degrees C 40 degrees F.

### 1.5 DEFINITIONS AND ABBREVIATIONS

Terms used in this specification are defined in EN 26927.

- a. Type S: Single-component
- b. Type M: Multicomponent
- c. Grade P: Pourable or self-leveling sealant for horizontal applications
- d. Grade NS: Nonsag for vertical applications
- e. Class 25: Withstands increase and decrease of at least 25 percent of joint width
- f. Class 12.5: Withstands increase and decrease of at least 12.5 percent of joint width
- g. Use T: Pedestrian and vehicular traffic areas such as walkways, plazas, decks, and parking garages
- h. Use NT: Nontraffic areas, horizontal and vertical surfaces
- i. Use M: Meets this specification when tested on mortar

- j. Use G: Meets this specification when tested on glass
- k. Use A: Meets this specification when tested on aluminum
- l. Use O: Meets this specification when tested on substrates other than above. Specify substrate types in project specification.

PART 2 PRODUCTS

2.1 SEALANTS

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NOTE: Use Latex Sealant for temporary, low budget construction; interior sealing of joints in wood or masonry, or in short joints between masonry, wood, or metal surfaces where maximum movement is anticipated not to exceed 15 percent of joint width.

Use elastomeric Sealants for interior and exterior applications where maximum joint movement is anticipated to be between 25 and 50 percent of joint width.

Chemically curing sealants should not be used adjacent to or above membrane surfaces of asphaltic or bituminous materials; a sealant based on asphalt or bituminous materials similar to those in the membrane should be used.

Since all sealants meeting this specification are not suitable for all applications and substrates, specify applicable type, grade, class, and use(s) for each intended purpose:

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Provide sealant that has been tested and found suitable for the substrates to which it will be applied.

2.1.1 Interior Sealant

[Type S or M, Grade NS, Class 12.5, Use NT], acrylic resin based, water soluble. Products meeting the requirements of this specification include but are not limited to the following:

Sika Acryl  
 Sika Italia, S.p.A.  
 via E. De Amicis, 44  
 20123 Milano  
 Tel: 02/721-261  
 Fax: 02/805-5649

HILTI C.S. 202  
 HILTI Italia, S.p.A.  
 via Saccardo, 9

20134 Milano (MI)  
Tel: 02/212-721  
Fax: 02/264-13-269

JOINTOSOUPPL 2001 ACR  
Joint  
via del Vivaio, 15  
40132 Bologna  
Tel: 051/40-0086  
Fax: 051/40-0398

Starmastic AC 90  
Materiali Protetti Milano, S.p.A. (MPM)  
via S. Critoforo, 84  
20090 Trezzano (MI)  
Tel: 02/484-00-388  
Fax: 02/445-1703

Location(s) and color(s) of sealant shall be as follows:

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**NOTE: If the space above the ceiling will be used  
as an air plenum, coordinate with sealant specified  
in Section 09510, "Acoustical Ceilings."**  
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LOCATION	COLOR
a. Small voids between walls or partitions and adjacent lockers, casework, shelving, door frames, built-in or surface-mounted equipment and fixtures, and similar items.	[As selected] [Gray] [White] [_____]
b. Perimeter of frames at doors, windows, and access panels which adjoin exposed interior concrete and masonry surfaces.	[_____]
c. Joints of interior masonry walls and partitions which adjoin columns, pilasters, concrete walls, and exterior walls unless otherwise detailed.	[_____]
d. Joints between edge members for acoustical tile and adjoining vertical surfaces.	[_____]
e. Interior locations, not otherwise indicated or specified, where small voids exist between materials specified to be painted.	[_____]
f. Joints between bathtubs and ceramic tile; joints between shower receptors and ceramic tile; joints formed where nonplaner tile surfaces meet.	[_____]

LOCATION	COLOR
g. Joints formed between tile floors and tile base cove; joints between tile and dissimilar materials; joints occurring where substrates change.	[_____]
h. Behind escutcheon plates at valve pipe penetrations and showerheads in showers.	[_____]
i. [_____]	[_____]

#### 2.1.2 Exterior Sealant

##### 2.1.2.1 Vertical Joints

For joints (8 mm to 35 mm) in vertical surfaces, provide an elastic (low modulus of elasticity) polyurethane, Type S or M, Grade NS, Class 25, use NT. Products meeting the requirements of this specification include but are not limited to the following:

Sikaflex-PRO 1 FC  
Sika Italia, S.p.A.  
via E. De Amicis, 44  
20123 Milano  
Tel: 02/721-261  
Fax: 02/805-5649

HILTI C.S. 202  
HILTI Italia, S.p.A.  
via Saccardo, 9  
20134 Milano (MI)  
Tel: 02/212-721  
Fax: 02/264-13-269

Reysflex 151  
Joint  
via del Vivaio, 15  
40132 Bologna  
Tel: 051/40-0086  
Fax: 051/40-0398

##### 2.1.2.2 Horizontal Joints

For joints in horizontal surfaces, provide an elastic (0.15 N/mm<sup>2</sup> modulus of elasticity) polyurethane, Type S or M, Grade P, Class 25, use T. Products meeting the requirements of this specification include but are not limited to the following:

Sikaflex-PRO 1 SL  
Sika Italia, S.p.A.  
via E. De Amicis, 44  
20123 Milano

Tel: 02/721-261  
Fax: 02/805-5649

Starmastatic SK 13  
Materiali Protetti Milano, S.p.A. (MPM)  
via S. Critoforo, 84  
20090 Trezzano (MI)  
Tel: 02/484-00-388  
Fax: 02/445-1703

Reysflex 151  
Joint  
via del Vivaio, 15  
40132 Bologna  
Tel: 051/40-0086  
Fax: 051/40-0398

Location(s) and color(s) of sealant shall be as follows:

LOCATION	COLOR
a. Joints and recesses formed where frames and subsills of windows, doors, louvers, and vents adjoin masonry, concrete, or metal frames. Use sealant at both exterior and interior surfaces of exterior wall penetrations.	[Match adjacent surface color] [As selected [Gray] [White] [_____]
b. Joints between new and existing exterior masonry walls.	[_____]
c. Masonry joints where shelf angles occur.	[_____]
d. Joints in wash surfaces of stonework.	[_____]
e. Expansion and control joints.	[_____]
f. Interior face of expansion joints in exterior concrete or masonry walls where metal expansion joint covers are not required.	[_____]
g. Voids where items pass through exterior walls.	[_____]
h. Metal reglets, where flashing is inserted into masonry joints, and where flashing is penetrated by coping dowels.	[_____]
i. Metal-to-metal joints where sealant is indicated or specified.	[_____]
j. Joints between ends of gravel stops, fascias, copings, and adjacent walls.	[_____]

LOCATION

COLOR

k. [\_\_\_\_\_]

[\_\_\_\_\_]

## 2.2 PRIMERS

Provide a nonstaining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application.

## 2.3 BOND BREAKERS

Provide the type and consistency recommended by the sealant manufacturer for the particular application.

## 2.4 BACKSTOPS

Provide glass fiber roving or neoprene, butyl, polyurethane, or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer. Backstop material shall be compatible with sealant. Do not use oakum [, [\_\_\_\_\_]] and other types of absorptive materials as backstops.

## 2.5 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer [except for aluminum and bronze surfaces that will be in contact with sealant].

## PART 3 EXECUTION

### 3.1 SURFACE PREPARATION

Surfaces shall be clean, dry to the touch, and free from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. When resealing an existing joint, remove existing calk or sealant prior to applying new sealant.

#### 3.1.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finish work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue-free solvent.

#### 3.1.2 Aluminum or Bronze Surfaces

Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive just prior to sealant application. For removing protective coatings and final cleaning, use nonstaining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

### 3.2 SEALANT PREPARATION

Do not add liquids, solvents, or powders to the sealant. Mix multicomponent elastomeric sealants in accordance with manufacturer's instructions.

### 3.3 APPLICATION

#### 3.3.1 Joint Width-To-Depth Ratios

##### a. Acceptable Ratios:

<u>JOINT WIDTH</u>	<u>JOINT DEPTH</u>	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
6 mm (minimum)	6 mm	6 mm
over 6 mm	1/2 of width	Equal to width
For wood, concrete, masonry, stone, or _____:		
6 mm (minimum)	6 mm	6 mm
Over 6 mm to 13 mm	6 mm	Equal to width
Over 13 mm to 50 mm	50 mm	16 mm
Over 50 mm	(As recommended by sealant manufacturer)	

<u>JOINT WIDTH</u>	<u>JOINT DEPTH</u>	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch	1/2 of width	Equal to width
For wood, concrete, masonry, stone, or _____:		
1/4 inch (minimum)	1/4 inch	1/4 inch
Over 1/4 inch to 1/2 inch	1/4 inch	Equal to width

JOINT WIDTH

JOINT DEPTH  
Minimum                      Maximum

Over 1/2 inch to 2 inches	1/2 inch	5/8 inch
Over 2 inches	(As recommended by sealant manufacturer)	

- b. Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding shall not be required on metal surfaces.

3.3.2 Backstops

Install backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified. Install backstops in the following locations:

- a. Where indicated.
- b. Where backstop is not indicated but joint cavities exceed the acceptable maximum depths specified in paragraph entitled, "Joint Width-to-Depth Ratios."

3.3.3 Primer

Immediately prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

3.3.4 Bond Breaker

Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

3.3.5 Sealants

Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and can not be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Sealant shall be uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply sealant, and tool smooth as specified.

3.4 PROTECTION AND CLEANING

3.4.1 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

3.4.2 Final Cleaning

Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

- a. Masonry and Other Porous Surfaces: Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Allow excess sealant to cure for 24 hour then remove by wire brushing or sanding.
- b. Metal and Other Non-Porous Surfaces: Remove excess sealant with a solvent-moistened cloth.

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**NOTE: Suggestions for improvement of this specification will be welcomed using the Navy "Change Request Forms" subdirectory located in SPECSINTACT in Jobs or Masters under "Forms/Documents" directory or DD Form 1426. Suggestions should be forwarded to:**

**Commanding Officer  
Naval Construction Battalion Center  
NAVFAC 15G/CESO 158  
1000 23rd Avenue  
Port Hueneme, CA 93043-4301**

**FAX: (805) 985-6465/982-5196 or DSN 551-5196**

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