



MOMENTIVE
performance materials

RapidStrength* RGS7700 Structural silicone elastomeric adhesive

Product Description

RapidStrength RGS7700 neutral cure silicone elastomeric adhesive has a very fast, deep-section cure profile. RapidStrength RGS7700 silicone elastomeric adhesive is supplied as a two-part thixotropic paste and within a few minutes of mixing at room temperature quickly cures to a durable and resilient silicone rubber with primerless adhesion to many substrates. RapidStrength RGS7700 silicone elastomeric adhesive is typically used with continuous proportioning equipment configured with disposable static mixers and may be an excellent candidate for use in the construction of commercial doors and windows, in window wall applications, and for the fabrication and shop glazing of curtainwall modules.

Typical Performance Properties

- **Silicone Durability** - RapidStrength RGS7700 silicone elastomeric adhesive is a 100% silicone composition with traditional elastomeric properties for long-term durability and resistance to weathering, ultraviolet exposure and high & low temperatures.
- **Fast Cure Speed** - Offers a very fast and thorough deep section cure for productivity and processing advantages with typical snap times between 6 and 12 minutes. After mixing, the material develops significant adhesive and elastomeric strength which can significantly reduce time between fabrication and movement and handling of assembled frames or components.
- **Variable Ratio Capability** - Control snap times, cure speed and strength development through volume mix ratio adjustment within range of 8/1 to 12/1 to accommodate faster project schedules and production processes.
- **Primerless Adhesion** - Bonds to most conventional substrates and finishes including: glass, glass coatings, ceramic frits, fluoropolymer and powder coated paints, conversion-coated and anodized aluminum. Some finishes may require a primer.
- **Standard Equipment** - RapidStrength RGS7700 silicone elastomeric adhesive is easily processed using common mixing/dispensing equipment with low cost, disposable, static mixers. Hot-melt equipment is not required to process this material as heating of RapidStrength is not necessary.
- **Excellent Processability** - The low pumping viscosity and high application rate of RapidStrength RGS7700 silicone elastomeric adhesive provides for longer pump life with reduced maintenance on equipment and faster and more thorough joint filling capability with easier tooling effort.

Momentive Performance Materials is an exclusive licensee of General Electric. Momentive Performance Materials provides versatile materials as the starting point for its creative approach to ideas that help enable new developments across hundreds of industrial and consumer applications.

We are helping customers solve product, process, and performance problems; our silanes, fluids, elastomers, sealants, resins, adhesives, urethane additives, and other specialty products are delivering innovation in everything from car engines to biomedical

devices. From helping to develop safer tires and keeping electronics cooler, to improving the feel of lipstick and ensuring the reliability of adhesives, our technologies and enabling solutions are at the frontline of innovation.



Exclusive
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Typical Performance Properties (continued)

- **Easy Repairs** - The traditional silicone rubber properties of RapidStrength RGS7700 silicone elastomeric adhesive allows for frames or components to be easily deglazed as would be expected from silicone materials.
- **High Tensile Strength** - Meets the strength requirements of the ASTM C1184 Specification for Structural sealants.
- **Product Versatility** - Compatible with the following GE sealants' products/series: IGS3703, IGS3713-D1, IGS3729, IGS3723, IGS3733, IGS3743, SCS2000, SCS2700, SCS9000, SCS2800, SSG4000AC, SSG4800J, SSG4000 and SSG4400.
- **Product Chemistry** - Neutral cure with low odor.

Basic Uses

- RapidStrength RGS7700 silicone elastomeric adhesive may be an excellent material of choice for use in structural glazing applications such as factory glazing of unitized curtainwall systems, heavy commercial or architectural applications, impact applications, or the glazing or bedding of windows in window wall frames and commercial door & window systems.
- RapidStrength RGS7700 silicone elastomeric adhesive may also be a candidate for use as a weatherseal product, when movement expected in the joint does not exceed its movement capability ($\pm 50\%$).
- RapidStrength RGS7700 silicone elastomeric adhesive has been validated in designs as an appropriate candidate for consideration for use in protective glazing applications.
- RapidStrength RGS7700 silicone elastomeric adhesive may be a candidate for use in panel stiffener applications.

Packaging

RapidStrength RGS7700 silicone elastomeric adhesive is available as a two-component system. The base component, RapidStrength RGS7700A base is available in 55 gallon fiber or steel, open top drums containing 44.4 gallons (166.5 Liters). The curing agent, RapidStrength RGS7700B catalyst is available in plastic 5 gallon pails containing 4.6 gallons (17.3 Liters) or 55 gallon steel open top drums containing 46.1 gallons (172.9 Liters). For ease of use and waste reduction, RapidStrength RGS7700A base and RapidStrength RGS7700B catalyst are not kit matched. Therefore, any batch or container of RapidStrength base may be used with any batch or container of RapidStrength curing agent. Small amounts of clear liquid may be visible on the surface of the catalyst. This should not impact product performance.

Colors

RapidStrength RGS7700 silicone elastomeric adhesive is available in Black and Gray:

- Base Part A RGS7700A, Off White
- Curing Agent Part B RGS7700B, Black (Yields Gray when mixed with RGS7700A)

When mixed at volume ratios from 8/1 to 12/1 RapidStrength RGS7700A base and RapidStrength RGS7700B catalyst produce a medium gray finished product.

Volume Ratio vs. Weight Ratio for RapidStrength RGS7700A Base with RapidStrength RGS7700B/RGS7703B Catalyst

Volume Ratio/1	Weight Ratio/1
8	10.4
9	11.7
10	13.0
11	14.3
12	15.6

Limitations

- Although RapidStrength RGS7700 silicone elastomeric adhesive is not directly dependent on exposure to atmospheric moisture to cure, it requires ventilation to complete its cure and adhesion development by releasing its' cure byproduct. RapidStrength RGS7700 silicone elastomeric adhesive should not be used in a completely sealed environment.
- It is not designed for continuous water immersion.
- RapidStrength RGS7700 silicone elastomeric adhesive provides primerless adhesion to a wide range of substrates, but variability in substrate composition and/or cleanliness can interfere with adhesion. The user is responsible for ensuring that the adhesion characteristics of RapidStrength RGS7700 silicone elastomeric adhesive to the user's substrates will meet his/her expectations.
- Structural glazing industry guidelines (ASTM C1401) suggest that drawings and details are to be reviewed by all parties involved in the manufacture of an SSG system and for each building project. RapidStrength RGS7700 silicone elastomeric adhesive should be used in structural glazing applications only after Momentive Performance Materials¹ has reviewed shop drawings and has performed adhesion and compatibility tests on project substrates and spacer materials. Review and testing is done on a project-by-project basis. No blanket approval is given by Momentive Performance Materials¹ for structural glazing applications.
- RapidStrength RGS7700 silicone elastomeric adhesive should not be used for structural adhesion on bare metals or surfaces subject to corrosion (*i.e.*, mill aluminum, bare steel, etc.)
- RapidStrength RGS7700 silicone elastomeric adhesive is not intended for use in food contact applications.

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Technical Services

Additional technical information and literature may be available from Momentive Performance Materials.¹ Laboratory facilities and application testing are available upon request from Momentive Performance Materials.¹ Any technical advice furnished by Momentive Performance Materials¹ or any representative of Momentive Performance Materials¹ concerning any use or application of any sealant is believed to be reliable but Momentive Performance Materials¹ makes no warranty, express or implied, of suitability for use in any application for which such advice is furnished.

Applicable Standards

- RapidStrength RGS7700 silicone elastomeric adhesive meets the strength requirements of the ASTM C1184 Specification for Structural Sealants.
- RapidStrength RGS7700 silicone elastomeric adhesive meets AAMA 802.3-92, Type II, 805.2-95, Group C.
- RapidStrength RGS7700 silicone elastomeric adhesive passes ASTM C719 Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle) at ±50%.

Joint Designs and Dimensions

The design professional has final responsibility for the determination of structural sealant joint dimensions based on factors such as design wind loads, glass sizes and anticipated thermal movement.

Suggested Reading: The ASTM C1401 Standard Guide for Structural Sealant Glazing provides a thorough overview of design topics and information for use in SSG systems.

Silicone contact width and thickness will vary by project with the design wind load and glass size. The width and thickness dimensions of the silicone can be calculated using the formulae found in the ASTM C1401 Standard Guide for Structural Sealant Glazing. A minimum sealant thickness of 1/4" (7mm) between substrates is required to accommodate thermal expansion and contraction of most systems and should be used in order to assure that sealant can be injected into the structural cavity obtaining full contact with both the glass and metal surfaces while remaining free of air voids. Greater joint thickness may be required to accommodate movement in some larger-sized SSG systems. Momentive Performance Materials¹ can be contacted to assist in determination of proper joint thickness to accommodate expected movement in structurally glazed applications.

Figure 1: RapidStrength RGS7700 Silicone Elastomeric Adhesive Strength Build Rate @ 10 to 1 Volume Mix Ratio

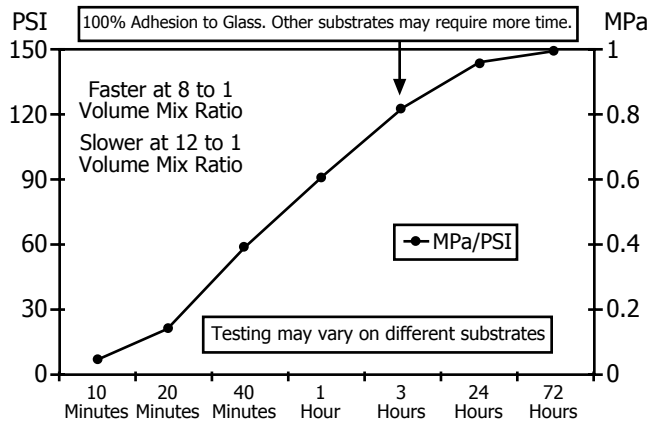
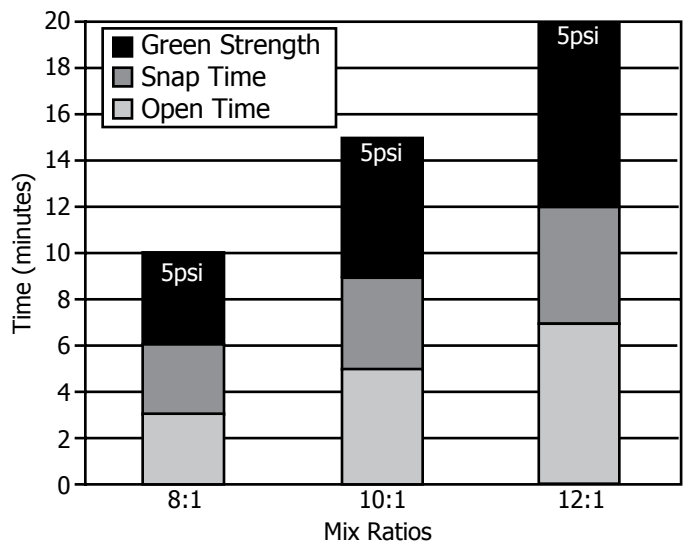


Figure 2: Curing Times / psi



The following materials are required to be submitted to Momentive Performance Materials¹ to receive suggestions for the use of RapidStrength RGS7700 silicone elastomeric adhesive.

- Architectural and shop drawings for review and comment.
- Design wind load requirement(s) for project.
- Glass or panel sizes.
- Production samples of metal, glass, gaskets, spacers and setting blocks with type and manufacturer identified.
- Specification and/or identification of paint or finish to which RapidStrength RGS7700 silicone elastomeric adhesive is intended to adhere (*i.e.*, 215-R1 anodized or if paint; manufacturer, finish system and ID#).

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Joint Designs and Dimensions (continued)

Momentive Performance Materials¹ will provide the following, after reviewing the materials above:

- Determination as to whether the submitted joint dimensions meet the minimum design criteria necessary for the use of RapidStrength RGS7700 silicone elastomeric adhesive.
- Short-term adhesion data using (typically) the ASTM C794 and/or ASTM C1135 test method. Other test methods may be employed.
- Short-term compatibility test results on gaskets, spacers and setting blocks and other accessories per ASTM C1087 or Momentive Performance Materials¹ test method for compatibility.
- Information regarding suggested primers, when required.

Momentive Performance Materials¹ will not:

- Design sealant joints.
- Provide comments on the structural integrity of overall framing system(s).
- Provide long-term performance data.
- Determine suitability of RapidStrength elastomeric adhesive for any application.

Typical Physical Properties

As Supplied	Property	Value	Method
RapidStrength RGS7700A Base			
	Color	Off White	Visual
	Application Rate (Viscosity)	750 gr./minute	ASTM C-1183
	Specific Gravity	1.35	WPSTM P-15
RapidStrength RGS7700B Catalyst			
	Color	Black	Visual
	Specific Gravity	1.04	WPSTM P-15
VOC Data	RGS7700A RGS7700B RGS7700A with RGS7700B @ 13:1 wt. ratio	4 145 17	expressed as g/l excluding water & exempts)
As Cured			
RapidStrength RGS7700A Base with RapidStrength RGS7700B/RGS7703B Catalyst mixed @ 10/1 volume mix ratio			
	Color	Gray	Visual
	Snap Time	6 minutes	
	Cure Time, to Final Properties	Up to 7 days	
Cure time 24 hrs. @ 72°F, 50% RH except where noted otherwise			
	Tensile Strength	230 psi	ASTM D 412
	Elongation	280%	ASTM D 412
	Modulus @ 50% Elongation	50 psi	ASTM D 412
	Modulus @ 100% Elongation	110 psi	ASTM D 412
	Peel Strength to Float Glass	50 ppi	ASTM C 794
	Peel Strength to Kynar Coated Aluminum	43 ppi	ASTM C 794
	Green Strength @ 15 minutes Cure Time	15 psi	ASTM C 1135
	Green Strength @ 60 minutes Cure Time	100 psi	ASTM C 1135
	Hardness	Shore A: 28	ASTM D 2240
	Movement Capability	Plus, minus 50%	

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Installation

Surface Preparation

RapidStrength RGS7700 silicone elastomeric adhesive has been formulated to develop adhesion to most materials commonly used in the manufacturing of commercial glazing constructions including: glass, vinyl extrusions, fluoropolymer, acrylic, and polyester paints, anodized aluminum and powder coated aluminum.

Sealants may not adhere to these substrates or less than maximum adhesion may result if the surface is contaminated. Foreign materials such as but not limited to dirt, dust, oils and water and other contaminants particular to certain substrates including machine oils, water repellants, lubricants, waxes on painted surfaces, salt deposition on anodized surfaces can and may interfere with development of adhesion.

Momentive Performance Materials¹ can provide at the customer's request laboratory testing services to evaluate the adhesion and compatibility of its sealants to submitted customer substrates. This testing can provide data on what adhesion levels are to individual substrates and provide direction to the user on how adhesion may be improved through modification of the substrate surface properties in design or manufacture or special cleaning and/or priming procedures. Momentive Performance Materials¹ can also provide upon request technical services including specific cleaning procedures and priming recommendations for the customer to evaluate. Where individual or long term testing and/or evaluations beyond industry standard accepted test procedures are requested, a technical assistance service fee could be imposed by Momentive Performance Materials.¹

The user of RapidStrength RGS7700 silicone elastomeric adhesive is strongly advised to conduct his own testing to determine if the adhesion to the desired substrate is satisfactory for his needs. It is also recommended that the user conduct periodic quality control testing on their substrates and sealant during the course of using them in manufacturing operations to maintain a continued assurance that substrate, sealant or other conditions that could affect adhesion have not changed and that adhesion requirements are being met.

Materials

- Use clean, fresh solvent as recommended by the sealant manufacturer's test report. When handling solvents, refer to manufacturer's MSDS for information on handling, safety and personal protective equipment. Isopropyl Alcohol (IPA) is commonly used and has proven useful for most substrates encountered in SSG systems. Xylene and Toluene have also been found useful on many substrates.
- Use clean, white cloths free of lint or other lint-free wiping materials.
- Use a clean, narrow-blade putty knife for tooling silicone into the cavity.

Cleaning Procedures

- Remove all loose material (such as dirt and dust), plus any oil, frost or other contaminants from the area of the substrates to which the sealant will be adhered.
- Do not use detergent to clean the substrate as residue may be left on the surface.
- Clean the substrates receiving the sealant as follows: Using a two-rag wipe technique. Wet one rag with solvent and wipe the surface with it, then use the second rag to wipe the wet solvent from the surface BEFORE it evaporates. Allowing solvent to dry on the surface without wiping with a second cloth can negate the entire cleaning procedure because the contaminants may be re-deposited as the solvent dries.
- Change the cleaning rags frequently, as they become soiled. It is easier to see the soiling if white rags are used. Do not dip used wipe cloths into solvent as this can contaminate the solvent. Cleaning with contaminated solvent can result in sealant adhesion issues. Always use clean containers for solvent use and for solvent storage.
- When cleaning deep, narrow joints, wrap the cleaning cloth around a clean, narrow-blade putty knife. This permits force to be applied to the cleaned surface.
- Clean only as much area as can be sealed in one hour. If cleaned areas are again exposed to rain or contaminants, the surface must be cleaned again.

Primers

RapidStrength RGS7700 silicone elastomeric adhesive will bond to many clean surfaces without the aid of a primer. For difficult-to-bond substrates, the use of a primer or special surface preparation should be evaluated. An evaluation should be made for each specific application/substrate to determine quality of bond. When properly used, primers help assure strong and consistent sealant adhesion to surfaces that may be difficult to bond. Most primers are a blend of organic and inorganic chemicals, resins and solvents. NEVER APPLY PRIMER TO GLASS SURFACES. Obtaining the proper materials, as well as following the prescribed procedures, is vital to ensure the successful use of primers. PRIMER APPLICATION IS NOT A SUBSTITUTE FOR SURFACE PREPARATION. Consult GE sealants' primer datasheet(s) for specifics and recommendations for use.

CAUTION

Primers may contain solvents. When handling solvents, refer to manufacturer's MSDS for information on handling, safety and personal protective equipment.

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Installation (continued)

Sealant Application

- Apply the sealant by pushing the bead ahead of the nozzle and making sure that the entire cavity is filled sans air pockets or voids. Tooling should be done neatly, forcing the sealant into contact with the sides of the joint or cavity, thus helping to eliminate any internal voids and assuring good substrate contact.
- Due to the smooth consistency of RapidStrength RGS7700 silicone elastomeric adhesive, tooling agents such as water, soap or detergent solutions are not necessary or recommended. Dry tooling is recommended.
- Sealant application is not recommended when the temperature is below 40°F (4°C) or if frost or moisture is present on the surfaces to be sealed.

Mixing, Pumping and Dispensing

- RapidStrength RGS7700 silicone elastomeric adhesive should be mixed and applied using suitable continuous mixing equipment. Two-component equipment employing air operated pumps or servo driven gear pumps with adjustable mix ratio control perform satisfactorily.
- Because of the fast speed designed into RapidStrength RGS7700 silicone elastomeric adhesive, disposable static mixers with 24-30 mixing elements that mount directly on the outlet of the dispensing gun have provided best results.
- Consult Momentive Performance Materials¹ regarding suggested pumping equipment and pumping procedures for mixing and dispensing RapidStrength RGS7700 silicone elastomeric adhesive.

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Technical subject matter in this publication is described and protected by one or more pending US patent applications and foreign counterparts.

Product Safety, Handling and Storage

Customers considering the use of this product should review the latest Material Safety Data Sheet and label for product safety information, handling instructions, personal protective equipment if necessary, and any special storage conditions required. Material Safety Data Sheets are available at www.momentive.com or, upon request, from any Momentive Performance Materials¹ representative. Use of other materials in conjunction with Momentive Performance Materials¹ products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

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Emergency Service

Momentive Performance Materials¹ maintains an around-the-clock emergency service for its products. The American Chemistry Council (CHEMTREC), Transport Canada (CANUTEC), and the Chemical Emergency Agency Service also maintain an around-the-clock emergency service for all chemical products:

Location	GE Branded Products	All Chemical Products
Mainland U.S., Puerto Rico	518.233.2500	CHEMTREC: 800.424.9300
Alaska, Hawaii	518.233.2500	CHEMTREC: 800.424.9300
Canada	518.233.2500	CANUTEC: 613.996.6666 (collect) or CHEMTREC: 800.424.9300
Europe, Middle East, Africa	+32.(0)14.58.45.45 (Belgium)	CHEMTREC: +1-703.527.3887 (collect)
Latin America, Asia/Pacific, all other locations worldwide	+518.233.2500	CHEMTREC: +1-703.527.3887 (collect)
At sea	Radio U.S. Coast Guard, which can directly contact Momentive Performance Materials ¹ at 518.233.2500	CHEMTREC: 800.424.9300

DO NOT WAIT. Phone if in doubt. You will be referred to a specialist for advice.

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| • UA, Silanes and Specialty Coatings | T +1.800.334.4674 | F +1.304.746.1623 |
| • RTV's and Elastomers | T +1.800.332.3390 | F +1.304.746.1623 |
| • Consumer Sealants & Construction Sealants and Adhesives | T +1.877.943.7325 | F +1.304.746.1654 |
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