

SECTION: ROMEX RSG 10 SYSTEM - GUIDE SPEC

Romex RSG 10 System - Resilient Permeable Hardscape System with a 10 Year warranty

07 00 00 Thermal and Moisture Protection
32 14 00 Unit Paving
32 14 13 Precast Concrete Unit Paving
32 14 13.13 Interlocking Precast Concrete Unit Paving
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32 14 13.19 Porous Precast Concrete Unit Paving
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32 14 26 Wood Paving
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32 14 40 Stone Paving
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32 16 00 – Curbs, Gutters, Sidewalks, and Driveways

32 16 13 Curbs and Gutters
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PART 1 – GENERAL

1.1 SUMMARY

- 1.1.1 This specification describes the components and application of Romex's RSG 10 system. This will include any test standards that are applicable to the Romex products that make up the RSG 10 system.

1.2 QUALITY ASSURANCE

- 1.2.1 Manufacturing qualifications: The manufacture of the product shall be ISO 9001 certified and obtain a good ongoing quality assurance program.
- 1.2.2 Contractor Qualifications: Contractor should be qualified in the field of hardscape with a successful track record. The contractor should have qualified personnel that are trained in Romex products by a Romex representative.
- 1.2.3 Install materials in accordance with all environmental conditions required by the manufacture. All products installed should be installed under the safety conditions set forth by the manufacture or as modified by the applicable rules and regulations of the local, provincial, and federal authorities having jurisdiction. Consult safety data sheets for all handling recommendations.

1.3 DELIVERY, STORAGE, AND HANDLING

- 1.3.1 All materials must be delivered in original, unopened containers with the manufactures name, labels, product identification, and batch numbers. Damaged material must be documented, reported to Romex Canada, and removed from site.
- 1.3.2 Store all materials off the ground and avoid excessive heat, rain, or freezing temperatures until ready for use.

1.4 JOB CONDITIONS

- 1.3.1 Site Conditions: The foundation needs to be prepared according to the expected traffic loads. Superstructure and substructure must be water permeable. Future loads must not cause the surface to settle or loosen stones. Regulations and leaflets regarding construction of paved stone surfaces should be heeded. Future loads must not cause the surface to settle or loosen stones.
- 1.3.2 Environmental Conditions: Do not apply if the if the surface below 5o c (41 o f) or over 30o c (86 o f) Celsius. Ideally, you would use ROMEX® Trass-Bed products. For optimum application it is recommended using ROMEX® application tools. Product should not be applied in rain.
- 1.3.3 Protection: Precautions should be taken to protect surrounding surfaces that are not to receive the product.

1.5 SUBMITTALS

- 1.5.1 Submit two (2) copies of the manufacturer's literature. This includes a Product Data Sheet (PDS) and a Safety Data Sheet (SDS).

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- 2.1.1 ROMEX® Rompox Deko-Pro/Profi-Deko as manufactured by Romex AG, Mühlgrabenstraße 21, 53340 Meckenheim, Germany is considered to conform to the requirements of this specification.

2.2 MATERIALS

- 2.2.1 55 lbs. of Romex – Rompox – Trass Bed Compound.
- 2.2.2 220 lbs. of 4mm – 8mm (1/8" – 3/8") of crushed aggregate.
- 2.2.3 55 lbs. of Romex – Adhesion Elutriant.
- 2.2.4 Romex Jointing Mortar (selection based on loading requirements)
- 2.2.5 59 lbs. of Romex Drain (55 lbs. of filler sand + 4 lbs. of Romex Drain Epoxy Resin).
- 2.2.6 59 lbs. of Romex D1 (55 lbs. of filler sand + 4 lbs. of Romex Drain Epoxy Resin).
- 2.2.7 59 lbs. of Romex D2000 (55 lbs. of filler sand + 4 lbs. of Romex Drain Epoxy Resin).

2.3 PERFORMANCE CRITERIA

- 2.3.1 Romex Trass Compound

Application time	approx. 1 hour at 20 °C 68 °F application temperature
Application temperature	5–25 °C 41–77 °F, do not lay onto frozen ground
Material requirement	approx. 18,5 kg 40.8 lbs. of ready mixed bedding mortar per cm layer thickness/m ² approx. 3,7 kg 8.2 lbs. ROMPOX® - TRASS-BED-COMPOUND
Water addition	approx. 11 liters 42.9 gal. of water per 25 kg 55 lbs. bag/ mortar mixture
Compressive strength	> 15–25 N/mm ² 2 175–3 626 psi after 28 days (dependent on filler material)
Water permeability coefficient*	≥ 14,2 x 10-5 m/sec 20.1 iph. (dependent on filler material)
Low chromate	yes
Storage life	12 months, dry and in original sealed container

2.3.2 Romex Adhesion Elutriant

Application time	approx. 2 hours at 20 °C 68 °F
Application temperature	5–25 °C 41–77 °F do not use on frozen ground
Material consumption	25 kg 55.1 lbs. = 19 liters 86 gal. of fresh mortar approx. 1,3 kg 2.86 lbs. per mm layer thickness/m ² for layer thickness 3–5 mm = 3,9–6,5 kg/m ² = Ø 5 kg/m ² 55.1 lbs. = 5 gal of fresh mortar approx. 2.86 lbs. per 1/16" layer thickness/sqm for layer thickness 1/8" – 3/16" = 0.80–1.33 lb./sqft = Ø 1.02 lb./sqft
Addition of water	approx. 8 liters 2.1 gal. of water per 25 kg 55.1 lbs. Elutriant
Low in chromate	yes
Storage life	12 months, dry and in originally sealed containers

2.2.3 Romex Drain

Test report no. 55-2909/04 CPH-7134-DRAIN, audited colour „neutral“, goods in bags		
System	2-component epoxy resin pavement jointing mortar	
Compressive strength	15.1 N/mm ² 2 190 psi Laboratory value 9.2 N/mm ² 1 334 psi Building site value	DIN 18555 part 3
Bending tensile strength	7.4 N/mm ² 1 073 psi Laboratory value 5.1 N/mm ² 740 psi Building site value	DIN 18555 part 3
Static elasticity module	1 240 N/mm ² 179 847 psi Laboratory value 1 550 N/mm ² 224 808 psi Building site value	DIN 18555 part 4
Hard mortar raw density	1.57 kg/dm ³ 0.91 oz/in ³ Laboratory value 1.29 kg/dm ³ 0.75 oz/in ³ Building site value	DIN 18555 part 3
Application temperature	> 0 °C up to max. 30 °C > 32 °F up to max. 86 °F At lower temperatures slow hardening, At high temperatures quick hardening	ROMEX®-norm 04
Re-opening of surface at 20 °C 68 °F	after 24 hours can be walked on, after 6 days fully load bearing	
Water permeability coefficient*	4.96 × 10 ⁻³ m/s approx. 15 l/min/m ² for a joint fraction of 10 % 703 iph approx. 0.37 gal/min/sqft for a joint fraction of 10 %	
Storage life	24 months resin/hardener components: frost free, filler components: dry	

2.2.4 Romex D1

Test report, audited colour "neutral", goods in bags.		
System	2-component epoxy resin pavement jointing mortar	
Compression strength	25.8 N/mm ² 3 742 psi Laboratory value 16.6 N/mm ² 2 408 psi Building site value	DIN 18555 part 3
Bending tensile strength	12.0 N/mm ² 1 740 psi Laboratory value 7.9 N/mm ² 1 145 psi Building site value	DIN 18555 part 3
Static elasticity module	8 000 N/mm ² 1 160 302 psi Laboratory value 2 180 N/mm ² 316 182 psi Building site value	DIN 18555 part 4
Hard mortar raw density	1.68 kg/dm ³ 0.97 oz/in ³ Laboratory value 1.43 kg/dm ³ 0.83 oz/in ³ Building site value	DIN 18555 part 3
Application time at 20 °C 68 °F	20–30 minutes	ROMEX®-norm 04
Application temperature	> 0 °C up to max. 30 °C > 32 °F up to max. 86 °F At lower temperatures slow hardening, at high temperatures quick hardening	
Re-opening of surface at 20 °C 68 °F	after 24 hours can be walked on, after 6 days fully load bearing	
Water permeability coefficient*	7.5 × 10 ⁻⁴ m/s approx. 2.3 l/min/m ² for a joint fraction of 10 % 106.2 iph approx. 0.06 gal/min/sqft for a joint fraction of 10 %	
Storage life	24 months resin/hardener components: frost free, filler components: dry	

2.2.5 Romex D2000

Test report no. 55-2909/04 CPH-7134-D2000, audited colour "neutral ", goods in bags		
System	2-component epoxy resin pavement jointing mortar	
System	2-component epoxy resin pavement jointing mortar	DIN 18555 part 3
Compressive strength	51.9 N/mm2 7 528 psi Laboratory value 24.2 N/mm2 3 510 psi Building site value	DIN 18555 part 3
Bending tensile strength	15.4 N/mm2 2 234 psi Laboratory value 9.0 N/mm2 1 305 psi Building site value	DIN 18555 part 3
Static elasticity module	11 200 N/mm2 1 624 421 psi Laboratory value 2 390 N/mm2 346 640 psi Building site value D	DIN 18555 part 4
Hard mortar raw density	1.76 kg/dm3 1.02 oz/in3 Laboratory value 1.65 kg/dm3 0.95 oz/in3 Building site value	DIN 18555 part 3
Application time at 20 °C 68 °F	15–20 minutes	ROMEX®-norm 04
Application temperature	> 0 °C up to max. 30 °C > 32 °F up to max. 86 °F At lower temperatures slow hardening, At high temperatures quick hardening	
Re-opening of surface at 20 °C 68 °F	after 6 hours can be walked on, after 24 hours fully load bearing	
Water permeability coefficient*	9.06 × 10 ⁻⁶ m/s approx. 0.03 l/min/m2 for a joint fraction of 10 % 1.3 iph approx. 0.0007 gal/min/sqft for a joint fraction of 10 % (with appropriate compacting)	
Storage life	24 months resin/hardener components: frost free, filler components: dry	

PART 3 – EXECUTION

3.1 INSPECTION

- 3.1.1 If the area to receive the Romex RSG-10 system is on grade. The base must be prepared and compacted as per ASTM standards using ¾" clear crushed aggregate.
- 3.1.2 If the area to receive the Romex full RSG 10 system is on slab. The base must be built up as per the Romex Assembly Drawings for an on slab bonded systems. Detail drawings can be accessed at the following link.
<https://romexhardscapes.com/assemblies/>
- 3.1.3 Temperature readings of the ambient and substrate temperature must be taken and recorded before and during application.
- 3.1.4 Do not apply Romex Trass Bed during substrate temperatures below 0°C (32 °f).
- 3.1.5 Do not apply Romex Trass Bed in rainy conditions.
- 3.1.6 Do not apply the ROMEX® Rompox Drain, D1, or D2000 if the temperature is below 5oc (41oF).
- 3.1.7 Aggregate to be mixed with Romex Trass Bed to be inspected for suitability.
- 3.1.8 Base material should be inspected for depth and gravel type.

3.2 SITE PREPARATION

3.2.1 General Site Preparation

- A. The surface to receive The Romex RSG-10 System must be load bearing, firm and Water Permeable.
- B. Any areas that are water impermeable must be at a slope of 1.5% - 3% slope.
- C. Any areas that are watertight, where water flows or partial puddles form, it is recommended that a suitable capillary-breaking drainage mat is present.
- D. Pavers must be bonded to the Romex Trass Bed using Romex Adhesion Elutriant at a thickness of 3mm – 5mm.
- E. Joints must be free of debris and Romex Adhesion Elutriant before the application of Romex jointing mortar.
- F. Romex jointing mortar is to be applied to joint at a minimum width and depth determined by the grout type and its limitations.
- G. The surface should be cleaned prior to the application of Romex Jointing Mortar.
- H. The jointing product selection must reflect the loading requirements. See table below:

1 Romex Jointing Mortar	2 Loading Capabilities
2 Romex Drain	4 Pedestrian – Light Vehicles (up to 3 tons)
3 Romex D1	6 Vehicle Traffic (up to 7.5 tons)
4 Romex D2000	8 Heavy Vehicles (up to 25 tons)

3.2.2 On Grade

- A. The surface to receive The Romex RSG-10 System must be load bearing, firm and Water Permeable.
- B. The free draining subbase is placed on a compacted sub-grade or as per ASTM standards
- C. The free draining subbase must consist of ¾" clear crushed aggregate or approved alternative at depths according to load or as per ASTM standards. See table below for loading depths:
- D. The jointing product selection must reflect the loading requirements. See table below:

3 Load	4 Gravel Type and Depth
5 Pedestrian	6 ¾" Clear Crushed Aggregate at a depth of 4" – 6" Min.
7 Vehicle	8 ¾" Clear Crushed Aggregate at a depth of 6" – 8" Min.

3.2.3 On Slab

- A. A drainage plan must be in place before the installation of Romex Trass Bed.
- B. Water proofing (if necessary) must be installed before the Installation of Romex Trass bed.
- C. A protective slip sheet made of geosynthetic fabric can be installed as extra protection for the waterproof membrane.
- D. All joints must be cleared of any debris. Surface of pavers must be washed and cleaned of any impurities.
- F. Contractor is to complete the "Contractor Pre-Install Site Checklist" supplied by Romex.

3.3 MIXING

3.3.1 Romex Trass Bed

- A. Mix Romex Trass Bed using a pug mill mixer or a gravity mixer.
- B. Small amounts can be mixed in a wheelbarrow or a tub mixer.
- C. Romex Trass Bed is to be mixed with filler material (Rolled Grit/Gravel 3mm – 4mm (1/8" – 3/8") at a ratio of 1:4 (1 part Romex Trass Bed: 4 parts filler material).
- D. Add approx. 9 liters (2.9 gal.) of clean cool water to the mixer.
- E. Add 50% of the filler material to the mixer.
- F. Add Romex Trass Bed to the mixer.
- G. Keep adding water (up to 11 liters) until the mixture is slightly shiny and can be rolled into a ball.
- H. Whenever possible use entire units of Romex Trass Bed, otherwise weighing the material is necessary.

3.3.2 Romex Adhesion Elutriant

- A. Tools for mixing consist of an empty, clean 5 gal. pail and a neutral mixing bit with a low-speed drill (400-6000 Rpm) for mixing.
- B. Add 8 Liters (2.1 gal.) of cool, clean water to 5 gal. pail
- C. Add 25 Kg (55.1 Lbs.) of Romex Adhesion Elutriant to the water.
- D. Mix the two components for 3 minutes. A consistent, smooth consistency must be achieved.
- E. Let the mixture sit for three minutes to mature. Follow this siting time with a brief mixing.
- F. Depending on usage and requirements, a small amount of water can then be mixed in to achieve desired consistency.

3.3.3 Romex Adhesion Elutriant

- A. Using a professional agitator or rotary-drum mixer / compulsory mixer, pour in one full 25 Kg (55 Lbs.) bag of Romex filler silica sand.
- B. Add both bottles of Romex Drain separately packaged 2.5 kg | 5.5 lbs. resin/hardener component completely to the sand in the mixer.
- C. Add 0.5 Liters (0.13 gal.) of water to the empty, separately packaged 2.5 kg | 5.5 lbs. resin/hardener component jugs. Shake vigorously and add to the resin/sand mixture.
- D. Mix for three (3) minutes.
- E. After the sand and resin has mixed for 3 minutes add 2 liters (0.53 Gal.) of water to the mixture.
- F. Place the lids securely back on the bottles. They can now go to the hard plastics recycling.
- G. Mix for another three (3) minutes, making six (6) minutes of total mixing time (per mix).
- H. Romex Rompox Drain Jointing Mortar is now ready for installation.

3.3.4 Romex D1

- A. Using a professional agitator or rotary-drum mixer / compulsory mixer, pour in one full 25 Kg (55 Lbs.) bag of Romex filler silica sand.
- B. Add both bottles of Romex D1 separately packaged 2.5 kg | 5.5 lbs. resin/hardener component completely to the sand in the mixer.
- C. Add 0.5 Liters (0.13 gal.) of water to the empty, separately packaged 2.5 kg | 5.5 lbs. resin/hardener component jugs. Shake vigorously and add to the resin/sand mixture.
- D. Mix for three (3) minutes.
- E. After the sand and resin has mixed for 3 minutes add 3 liters (0.8 Gal.) of water to the mixture.
- F. Place the lids securely back on the bottles. They can now go to the hard plastics recycling.
- G. Romex Rompox D1 Jointing Mortar is now ready for installation.

3.3.5 Romex D2000

- A. Using a professional agitator or rotary-drum mixer / compulsory mixer, pour in one full 25 Kg (55 Lbs.) bag of Romex filler silica sand.
- B. Add both bottles of Romex D2000 separately packaged 2.5 kg | 5.5 lbs. resin/hardener component completely to the sand in the mixer.
- C. Add 0.5 Liters (0.13 gal.) of water to the empty, separately packaged 2.5 kg | 5.5 lbs. resin/hardener component jugs. Shake vigorously and add to the resin/sand mixture.
- D. Mix for three (3) minutes.
- E. After the sand and resin has mixed for 3 minutes add 2 liters (0.53 Gal.) of water to the mixture.
- F. Place the lids securely back on the bottles. They can now go to the hard plastics recycling.
- G. Mix for another three (3) minutes, making six (6) minutes of total mixing time (per mix).
- H. Romex Rompox D2000 Jointing Mortar is now ready for installation.

3.4 APPLICATION

3.4.1 General

- A. Before the application of Romex Trass Bed, the substrate should be inspected for impurities as well as grade.
- B. The Romex Trass Bed is placed upon the substrate at the desired thickness according to the loading requirements.
- C. All connecting elements are then set using Romex Adhesion Elutriant.
- D. Area must cure for 48 – 72 hours depending on weather and material consistency.
- E. After cured for 48 – 72 hours the Romex Jointing mortar can be applied.
- F. 7 days after application of Romex Jointing Mortar the surface can be opened to public foot traffic.
- G. 14 days after application of Romex Jointing Mortar the area can be opened to light vehicle traffic up to 3.5 tons.
- H. 28 Days after application of the Romex Jointing Mortar the area can be opened to its full load bearing capabilities.

3.4.2 Romex Trass Bed

- A. Apply mixed Romex Trass Bed to the desired Area. Moving of the Romex Trass Bed is typically done by a wheelbarrow.
- B. The thickness of the Romex Trass Bed should generally be between 4cm – 10cm (1.5" – 4") thick depending on the traffic load.
- C. Level/screed the Romex Trass Bed mixture to the desired height.
- D. Romex Trass Bed will be workable for approximately 2 hours in 20c (68f). The workability duration will be shorter in hotter weather and longer in cooler weather.
- E. All connection elements must be treated with Romex Adhesion Elutriant and hammered hard in to place.
- F. After laying material place a sheet of plastic over the area. After 24 hours spray the area lightly with water. Re-apply the plastic sheet and wait 48 hours or until bedding has reached full strength. In low temperatures this process may take longer.

3.4.3 Romex Adhesion Elutriant

- A. Apply the Romex Adhesion Elutriant to the slightly moist underside of the slab.
- B. The thickness of the Romex Adhesion Elutriant is to be 3mm – 5mm (1/8" – 1/4")
- C. Use a broad brush or a notched trowel to apply the Romex Adhesion Elutriant.
- D. The slabs can also be dipped into the Romex Adhesion Elutriant at a depth of 20mm - 30mm (3/4" – 1 1/4") then immediately hammered into place.
- E. Scrape off Romex Adhesion Elutriant 50 mm (2") from the edge of the slab to be laid.
- F. Place slab in desired location on top of the Romex Trass Bed and hammer into place.
- G. Care should be taken that the Romex Adhesion Elutriant does not squeeze out from under the slab in to the joint. This will seal the joint and make it impermeable.
- H. Sawed stones should be roughened before the application of Romex Adhesion Elutriant

3.4.4 Romex Drain

- A. Prewet surface of area to receive Romex Drain jointing mortar. Do not allow the joints to fill with water.
- B. When the surface remains well moistened the Romex Drain jointing mortar can be applied.
- C. Each unit of Romex Drain can be poured out into 3-4 locations on the area to receive jointing.
- D. Water can be added to improve flowability and extend working time.
- E. The Romex Drain can now be carefully worked into joints using a squeegee/rubber slider.
- F. If Romex Drain losses its flowable consistency during application, it can be mixed again to improve flowability..
- G. 0-20 minutes after initial application the excess mortar on the surface can be cleaned off using a Romex stiff broom on a 45-degree angle to the joints.
- H. After cleaning with the Romex stiff broom occurs a final cleaning using a Romex coconut fiber broom can take place.
- I. Do not reuse swept off material.
- J. Protect freshly jointed surface from Rain for 12-24 hours. The rain protection layer must not be laid directly onto the paved surface, to ensure sufficient air circulation.

3.4.5 Romex D1

- A. Prewet surface of area to receive Romex D1 jointing mortar. Do not allow the joints to fill with water.
- B. When the surface remains well moistened the Romex D1 jointing mortar can be applied.
- C. Each unit of Romex D1 can be poured out into 3-4 locations on the area to receive jointing.
- D. Water can be added to improve flowability and extend working time.
- E. The Romex D1 can now be carefully worked into joints using a squeegee/rubber slider.
- F. If Romex D1 loses its flowable consistency during application, it can be mixed again to improve flowability.
- G. 10-20 minutes after initial application the excess mortar on the surface can be cleaned off using a Romex stiff broom on a 45-degree angle to the joints.
- H. After cleaning with the Romex stiff broom occurs a final cleaning using a Romex coconut fiber broom can take place.
- I. Do not reuse swept off material.
- J. Protect freshly jointed surface from Rain for 12-24 hours. The rain protection layer must not be laid directly onto the paved surface, to ensure sufficient air circulation.

3.4.6 Romex D2000

- A. Prewet surface of area to receive Romex D2000 jointing mortar. Do not allow the joints to fill with water.
- B. When the surface remains well moistened the Romex D2000 jointing mortar can be applied.
- C. Each unit of Romex D2000 can be poured out into 3-4 locations on the area to receive jointing.
- D. Water can be added to improve flowability and extend working time.
- E. The Romex D2000 can now be carefully worked into joints using a squeegee/rubber slider.
- F. 10 minutes after initial application the excess mortar on the surface can be cleaned off using a Romex stiff broom on a 45-degree angle to the joints.
- G. After cleaning with the Romex stiff broom occurs a final cleaning using a Romex coconut fiber broom can take place.
- H. Do not reuse swept off material.
- I. Protect freshly jointed surface from Rain for 12-24 hours. The rain protection layer must not be laid directly onto the paved surface, to ensure sufficient air circulation.

3.5 MOCKUP

- 3.5.1 A job site mockup should always be performed to ensure that the product or system conforms to the aesthetic, that material coverage rates are known, and methods and workmanship are understood.
- 3.5.2 Adhere to all the product limitations and cautions outlined by the manufacture.
- 3.5.3 A sample of the paving material should be tested to see the effects that the Jointing mortar will have on its aesthetic due to the resin film.
- 3.5.4 Contractor training a mockup should be performed to ensure that all stakeholders are aware of the best practices and processes that takes place to achieve the RSG-10 warranty.

3.6 CLEAN UP

- 3.6.1 Clean tools with water and brush after application
- 3.6.2 If material has hardened, the use of Romex – Power Clean may be needed.
- 3.6.3 All tools as well as work shoes should be regularly cleaned with a water spray during jointing.

END OF SECTION