

HELIX[®] 8-52 MICRO REBAR[®]

The unique, twisted design of Helix[®] Micro Rebar[®] allows for efficient tensile stress redistribution within the concrete prior to concrete cracking. This pre-crack property is coupled with solidly stable post-crack performance. The post-crack performance is optimized for the requirements of standardized beam tests. Helix Micro Rebar provides proactive reinforcement coupled with unheard-of resistance if a crack were to occur.

APPLICATIONS

- Structural Floors
- Tunnel Linings
- Paving
- Precast
- Rebar Replacement

COATING

None

GOMETRY

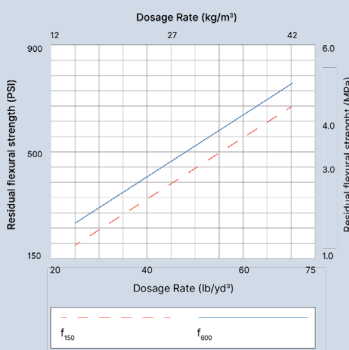
Length: 2.00 in (52 mm)
 Diameter: 0.03 in (0.80 mm)
 Number of twists: 4
 2,400 pieces/lb (5,280 pieces/kg)

PROPERTIES

- Tensile Strength: 246 ksi (1700 N/mm²) minimum
- Material: Hard Drawn Steel Wire

SUPERIOR BEAM TESTING RESULTS

Optimized for L/150 Beam Specs



DOSING INSTRUCTIONS

Mixing should be done in accordance with ASTM C94 and the mixing instructions below. The quantity of Helix Micro Rebar added to the mix should be noted on the batch documentation in accordance with Uniform Evaluation Service ER 279 Section 5.15 and may be verified using the procedure in ER 279 Appendix A if desired.

MIXING INSTRUCTIONS

Ready Mix Plants (Dry) - Truck Mixer

To prevent Helix Micro Rebar from clumping (small cluster of Helix), follow the procedures below:

- Add all Helix to the truck drum. Typically this is done by conveyor or by hand, dumping the entire contents of the box into the drum while it is at idle speed. Dumping boxes by hand can be done from a slump check stand if available.
- Drive the truck into the plant.
- Once the truck is in position under the chute, increase the drum to full charging speed and add a minimum of 50% of the batch water into the truck (50% to 80% is okay).
- Allow the Helix and water to mix for no less than 45 seconds while delaying the addition of the remaining materials. *Note: Once the water and Helix are in the drum and the drum is at charging speed, the drum speed shall NOT decrease until all batching is complete.*
- Add coarse aggregate, sand, cement, and remaining water to truck and mix in normal manner (60 revolutions minimum).

READY MIX WET (CENTRAL MIX)

- For dosages below 15 lb/cyd (9kg/m³) follow procedures for “Truck Mixer” above with dry procedures with 7 gallons (27 liters) of water in the drum.
- For higher dosage, please use the Site Batching instructions to the right.

PAN MIXER/DRUM MIXER

- Set the mixer to the proper speed.
- Add Helix at a rate of 45 lb (20 kg) per 45-60 seconds. Helix should be added with aggregates.
- Mix at max speed for 5 minutes after Helix is added.

SITE BATCHING INTO MIX TRUCKS (LOADED TRUCK AT CONSTRUCTION SITE)

- Set the drum to charging speed.
- Sift Helix through a 2" by 2" (50mm x 50mm) mesh or use Helix Dosing Unit (contact Helix to order). The dosing unit breaks up clumps and ensures Helix goes into the truck at a controlled rate (about 1 box per minute). When Helix is added at this stage, it must enter the mixer clump-free.
- When adding Helix, it may collect on any residual concrete on the interior surfaces of the hopper. Push the Helix into the drum, avoiding clumps. Adding a slippery lining, such as PVC sheeting, to the hopper may help avoid these buildups.
- Mix at charging speed for 5 minutes (60 revolutions) after Helix is added.

SPECIFICATIONS

ASTM A820 - Type 1 ASTM C496
 ASTM C1609 ASTM C78

Industry Specifications

Publicly available project specs require performance in terms of residual bending stress in standard beam tests at various deflections. Helix is able to meet these specifications at reduced dosage rates. See below for examples.

Tunnel Project	Residual Strength Specification psi (MPa)	Specified Dosage Rate lb/yd ³ (kg/m ³)	Helix 8-52 Dosage Rate lb/yd ³ (kg/m ³)
Euclid Creek	L/600 - 464 (3.2)	67 (40)	50 (30)
Blue Plains	L/600 - 435 (3.0)	67 (40)	50 (30)
Hartford	L/150 - 580 (4.0)	67 (40)	60 (36)
Doan Valley	L/600 - 520 (3.6)	60 (36)	50 (30)
Thimble Shoals	L/300 - 456 (3.1) & L/150 - 425 (2.9)	-	45 (27)
Dugway	L/600 - 464 (3.2)	67 (40)	50 (30)
Blacklick	L/600 - 158 (1.1)	25 (15)	20 (12)
Akron	L/600 - 500 (3.4)	50 (30)	50 (30)