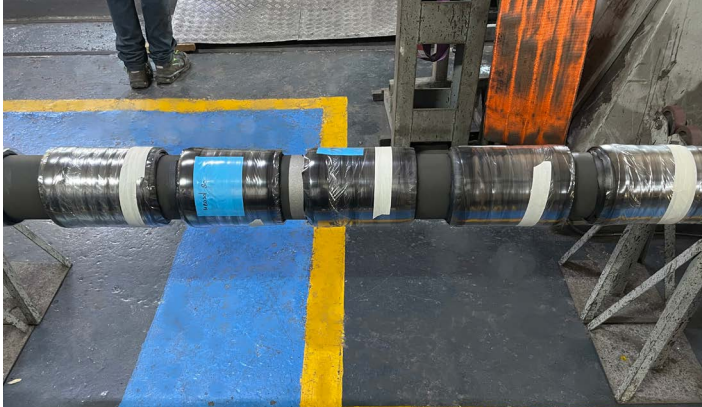


Water-based Adhesive from DuPont Enables First-to-market Success for Bonded Rollers



Two-coat (primer and cover adhesive) MEGUM™ W-Series specialty adhesive bonds soft and hard rubber to industrial rollers.

Rollers are crucial to many big industries and machinery manufacturers including those that serve food, paper, chemical, textile, graphic arts, wood, packaging, tanning, iron and steel and glass markets. Solgamma S.p.A, located in Empoli, Italy – near Florence, specializes in rubber molding and compounding, but considers its “crowning glory” to be roller coverings. Difficult to produce, especially in large lengths and diameters, Solgamma’s aim is to provide rollers covered with a variety of rubbers or compounds suited to customers’ end uses, while ensuring few to no roller returns for recovering. In addition, with a location in Tuscany’s highly important tourism and history district, sustainability is also an important factor in Solgamma’s operation.

Challenge

Adhering coverings to rollers of varying dimensions from small to large is a difficult task. Adhesives are the best choice for this application however, many solvent-based formulations present challenges. A major challenge is solvent emissions that create an odor in the operation and surrounding area. In addition, replacing solvent-base bonding agents is difficult because water-based adhesives have a different drying behavior. Typically, water-based agents require high temperatures to completely remove water after priming and covering. Solgamma was looking for a more sustainable water-based solution that eliminated odors and achieved high-performance bonding.

Solution

Through their distributor partner, Safic Alcan, DuPont was presented with the opportunity to provide a solution to Solgamma’s roller covering challenge. In production trials at Solgamma’s facility, DuPont utilized its two-coat waterborne specialty adhesive, MEGUM™ W-Series to successfully edge bond roller coverings on different diameter industrial rollers.

Two different tests for drying conditions were performed – one at room temperature and one with hot air. For both tests, the first step was to apply the MEGUM™ W-Series primer. The test roller was then dried – at room temperature and with hot air. The second step was to apply the MEGUM™ W-Series cover adhesive and repeat the drying process at room temperature and with hot air. Then the rubber was applied and vulcanized through a hot steam or hot air autoclave to activate the crosslinking for a complete bond of the cover material to the metal roller. Superior bonding performance was observed (regardless of the type of rubber used) with MEGUM™ W-series specialty adhesive, including the bonding layers that were dried at room temperature. No preheating of the roller was required to ensure effective bonding.



Test results show superior bonding performance of MEGUM™ W-Series specialty adhesive for both hard and soft rubber to metal and aluminum rollers.

Result

Using a water-based adhesive for this important application was a first for Solgomma. Not only did the adhesive perform with drying conditions in both ambient and hot temperature environments, the water-based formulation eliminated odor and emissions. This is very important for both employees and the historic district in which the facility resides.

DuPont is proud of this success for a difficult application that is important to so many industries and appreciates the opportunity to work with great partners like Solgomma and Safic Alcan for an outcome that is beneficial to everyone from the supplier to the end user.

Collaboration creates the strongest bonds, and we welcome participation in your next project. We invite you to dEvelop with DuPont.

Trust a Proven Leader

MEGUM™ rubber-to-substrate adhesives are used to bond a variety of elastomer compounds to metal and plastic substrates including steel, stainless steel, aluminum, zinc, copper, polyamides, polyacetals, polyesters, and PTFE.

Now available in waterborne formulations, MEGUM™ W-Series adhesives are helping customers decrease their carbon footprint, increase worker safety, and improve cost efficiencies—all without sacrificing performance. This advancement improves environmental impacts for manufacturers while meeting their high-performance requirements.

DuPont has developed several different waterborne adhesives to suit a wide range of applications, substrates, and customer requirements. Most can be used in existing production lines—requiring no new machinery—and have fewer processing steps, which reduces energy consumption.

For more information, please visit www.dupont.com/brands/megum.html.



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