



CRM Is Helping To Make Our Lives Cleaner, Quieter and Smoother

By Ann Papagalos

Have you ever wondered what happens to your old worn out tires? The harsh reality is, the majority of tires end up in disheveled, non-degradable rubber heaps that spread like unsightly tumors.

California alone adds 35 million scrap tires to its decryped collection per year. Before California enacted legislation, all of its 35 million tires ended up in landfills

scattered throughout the state. Today, only 11 million tires annually retire to California landfills. The remaining 24 million scrap tires are shredded or recycled in rubberized asphalt.

H. Barry Takallou, Ph.D., P.E., a leading expert in crumb rubber, is president and CEO of Crumb Rubber Manufacturing (CRM). CRM recycles scrap tires to manufacture crumb rubber, the main

(Above) Front office of CRM's crumb rubber manufacturing facility located in Rancho Dominguez, California.

(Right) Waste tires incoming to CRM facility.





United States. The plant recycles over five million scrap tires per year diverting them from landfills. This equates to recycling 500 scrap tires per hour.

To maintain CRM's high volume, Takallou employs approximately 65 people. In addition, the plant is open and operational 365 days a year, twenty-four hours a day. CRM receives its scrap tires from a number of different municipalities throughout the state, including Los Angeles, Compton, Carson, and Santa Monica.

The company supplies over 70% of the asphalt contractors in California. Aside from the fact that CRM has a phenomenal capacity for high volume output, Takallou states his success in this industry stems from excellent customer service and a quality product.

"We provide our customers with much more than rubberized asphalt, we provide them with all of the technical expertise they need," states Takallou.

Takallou, who has a background in the contracting business, understands the complex requirements of rubberized asphalt and realizes CRM's success depends on its customers.

"Because we are open every day of the year 24x7, our contractors can call CRM at

ingredient used in rubberized asphalt for resurfacing roads and highways. CRM has the capacity to manufacture 60 millions lbs of crumb rubber on an annual basis.

CRM is the largest crumb rubber manufacturing plant in California. In fact, the company is the largest in the western

(Above) Dr. Takallou - Founder and Visionary of CRM.

(Right) Waste tires being fed into the primary sbredder.





(Left & Above) Bagging crumb rubber into supersacks and then loading for delivery to rubberized asphalt contractors.

any time, day or night, for technical support," said Takallou.

CRM has earned a reputation for manufacturing a high quality and consistent crumb rubber product. To better service customers while providing a premium product, CRM has made a substantial investment in its facility.

"My business philosophy is a combination of providing clients with service, a quality product while remaining price competitive," states Takallou.

Educated as a civil engineer, Takallou started his career in rubberized asphalt in 1982 while conducting research for the United States Federal Highway Division. Considered a pioneer in the field, Takallou wrote his doctoral thesis on rubberized asphalt in 1986.

Asphalt rubber is a chemically reacted mix of liquid asphalt binder with 15% to 22% crumb rubber. Tires recycled into crumb rubber end up in pieces about the size of salt and pepper. California uses a 1/2-inch layer of thin asphalt rubber placed on top of concrete termed asphalt rubber porous friction courses (OGFCs).

Rubberized asphalt has resurged in the 21st century after a precarious start in the early 1990's. California, Arizona and a number of other states are leading the nation in their efforts to reduce scrap tire waste as well as reduce noise pollution created by street traffic in congested urban areas.

The industry's successful reentry into the market place stems from a number of business and technological advancements. In 1992, the patent for rubberized asphalt expired, allowing people to freely enter the market. Tire-shedding technologies have vastly improved since the early 1990's, as has the mixture of ingredients needed to develop a durable grade of rubberized asphalt that is equal to or better than traditional asphalt. The final factor for the revitalization of the industry has been the expansion of recycling facilities that manufacture crumb rubber in the US.

Contractors are also branching out into this emerging market. Many contractors have entered the market as a means to diversify and grow their businesses. Other inherent benefits include a reduction in construction time lines because less material needs to be placed verses traditional asphalt. Another plus for existing contractors is traditional and rubberized asphalt use the same equipment, which makes it easy for contractors to switch processes without a substantial capital investment.

Proponents of rubberized asphalt, such as Takallou, cite a host of facts touting the advantages of rubberized asphalt. Compared to traditional asphalt, rubberized asphalt enhances nighttime visibility. It is environmental friendly. Not only does it help eliminate millions of old



(Above) The finished product is the consistency of coarse pepper as displayed above by CRM's California Sales Manager, Spero Papaioanu.

tires per year, it significantly reduces noise pollution generated from surface traffic. Proponents of the product cite an increase in road surface durability, which leads to reduce maintenance costs. Drivers enjoy the rubberized asphalt because of the smooth, quiet ride experienced regardless of the model and year of your vehicle.

California's Rubberized Asphalt Concrete Technology Center (www.rubberizedashpalt.org), a cooperative effort through Los Angeles County, Sacramento County and the California Integrated Waste Management Board lists 12 benefits to using asphalt rubber. The agency promotes the use of crumb rubber by providing education, training and consultation services to local California agencies. Twelve benefits listed by California's Rubberized Asphalt Concrete Technology Center include:

- Improved resistance to surface-initiated cracking due to higher binder contents
- Improved aging and oxidation resistance due to higher binder contents
- Improved resistance to fatigue and reflection cracking due to higher binder contents
- Improved resistance to rutting due to higher viscosity and softening points
- Increased nighttime visibility due to

contrast between the pavement and stripping

- Reduced tire noise due to increased binder film thickness and open texture
- Reduced splash and spray during rain storms due to open texture
- Reduced construction times because less material is placed
- Lower pavement maintenance costs due to improved pavement performance
- Better chip retention for chip seals due to thick films of asphalt
- Lower life cycle costs due to improved performance
- Savings in energy and natural resources by using waste products

According to Takallou, rubberized asphalt withstands extreme weather conditions, hot and cold, better than traditional asphalt. A test of its durability is found in Phoenix, Arizona. The extreme summer heat rises and stays above 110 degrees for months at a time. Phoenix is repaving many of its most traveled urban highways. To date, the state has spent approximately \$200 million on rubber asphalt paving projects.

On the other end of the spectrum, rubberized asphalt works well in cold climates. Industry experts state that rubber asphalt is immune to the wear and tear of snow chains and it experiences less chipping from snow plows.

Takallou, who has committed his career to improving our nation's surface streets through research and use of rubberized asphalt, believes that improving and expanding the nation's surface transportation infrastructure is imperative to economic development.

To further promote the development of transportation engineering, Takallou is currently a commissioner for the California Commission for Economic Development.

For more information on CRM, Barry Takallou can be reached at 310-538-2222. His office and manufacturing facility is located at 15800 South Avalon Blvd., Rancho Dominguez, California 90220. CRM supplies contractors with rubberized asphalt throughout the entire state of California as well as the rest of the United States. CRM also owns and operates a crumb rubber manufacturing plant in Arizona.