FIORMARKETS

North America Recycled Asphalt Shingles (RAS) Market -2028

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Chapter 1 Introduction

1.1 Objective of The Study

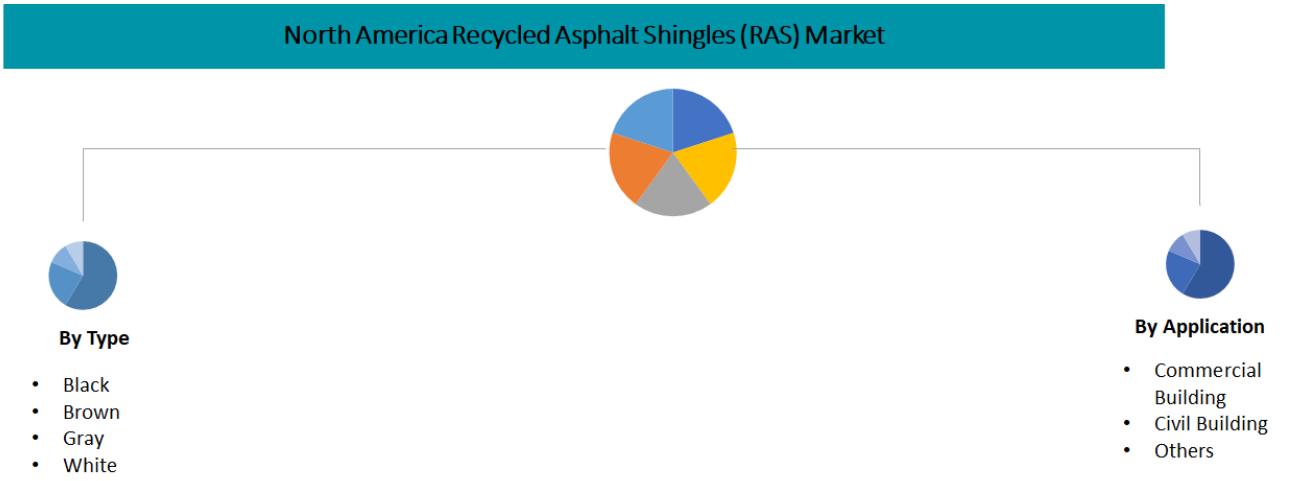
- The base year for the study has been considered 2020, historic year 2019 and 2018, the forecast period considered is from 2021 to 2028. North America recycled asphalt shingles (RAS) market is analyzed on the basis of value (USD Million), volume (K Tons) and price (USD/Ton).
- The study delivers a comprehensive analysis of North America recycled asphalt shingles (RAS) market by type, application and country.
- The report offers in-depth analysis of driving factors, opportunities, challenges and restraints for gaining the key insight of the market. The report emphasizes on all the key trends that play a vital role in the enlargement of the market from 2021 to 2028.
- Porter's Five Forces model is used in order to recognize the competitive scenario in the North America recycled asphalt shingles (RAS) market. This report incorporates the industry analysis which is focused on providing an extensive view of the recycled asphalt shingles (RAS) market.
- The study also includes attractiveness analysis of type, application and country which are benchmarked based on their market size, growth rate and attractiveness in terms of present and future opportunist for understanding the future growth of the market.
- The report provides company profile of the key players operating in the recycled asphalt shingles (RAS) market and a comparative analysis based on their business overviews, product offering, segment market share, regional presence, business strategies, innovations, mergers &acquisitions, recent developments, joint venture, collaborations, partnerships, SWOT analysis, and key financial information.
- The market estimates have been evaluated by considering the effect of different political, economic, social, technological and legal factors which are based on our extensive secondary research, primary research, and in-house databases.

1.2 Market Definition

Asphalt shingles are broadly used as roofing covers. In the US, around 11 million tons of asphalt roofing shingle scrap is produced every year. These asphalt shingle scraps are known as Recycled Asphalt Shingles (RAS). The Recycled shingles are the manufacturer's scrap or the recovered material from the old roofs. These shingle scraps, after proper processing, are used as a modifier in the Hot Mix Asphalt (MHA) and Warm Mix Asphalt (WMA). Asphalt Shingles could be both organic felt and fiberglass type. The composition of asphalt shingles depends on the manufacturing company. These are formed by infusing the organic or fiberglass felt with liquid asphalt and, after that, the addition of asphalt coating on both sides. So Asphalt shingle recycling is the constituent of construction and demolition recycling. As there is the requirement of recycling for other materials, this material needs recycling for the creation of the market. Presently the asphalt shingle recyclers can generate revenue as tipping fees for accepting old shingles and using marketing activities for selling processed materials. Some of the markets for recycled asphalt shingles are the existing early-stage market like the hot mix asphalt and cold patch, among others. The cost of petroleum is propelling the market like the high petroleum price is making RAS more attractive and vice versa. Another factor affecting the market is state regulation. The state rules about the limitations on the use of recycled shingles in the hot mix asphalt along with related to allowing of the opening of recycling facilities. For making the most of the opportunities provided by RAS, it is crucial to understand the properties of shingle constituent materials and it works and performs when used with asphalt mixtures. For making sure of the implementation of RAS in asphalt mixtures, it is important to follow quality-focused guidelines.

1.3 Research Scope

FIG. 1 Research Scope of North America Recycled Asphalt Shingles (RAS) Market

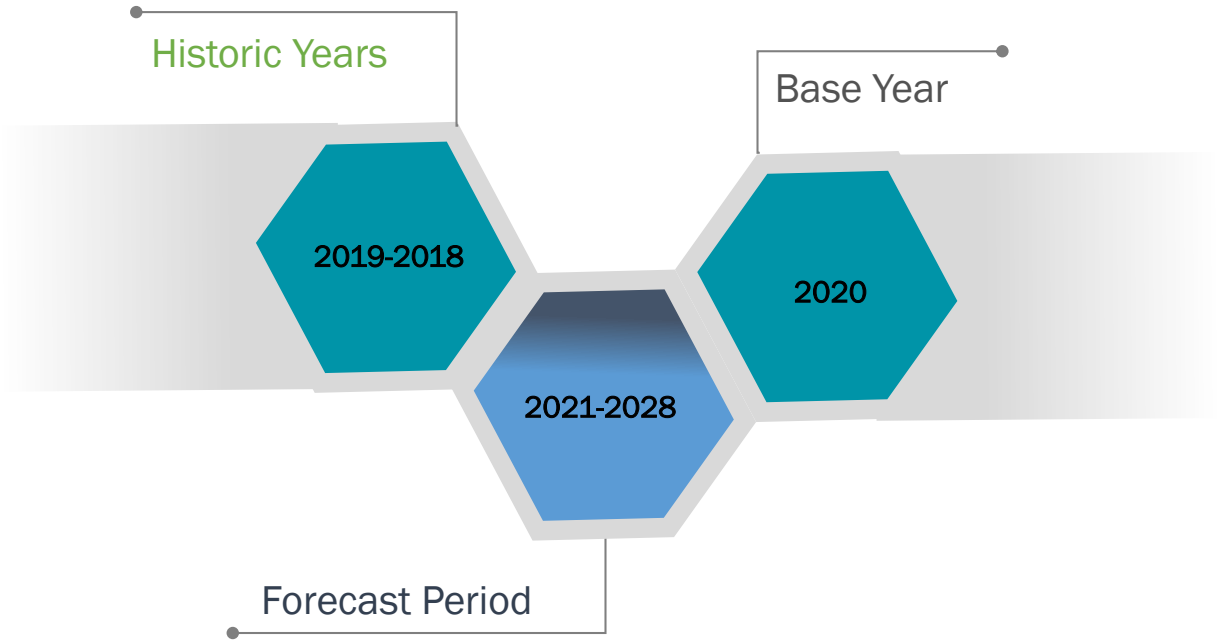


Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

1.4 Currency and Year consideration

The currency used in this report is USD, with market size indicated only in USD Million.

- For companies reporting their revenue in USD, the revenues shall be picked from their annual reports.
- For companies that reported their revenues in other currencies (USD and Pounds), the average annual currency conversion rate shall be used for the particular year to convert the value in USD.



Chapter 2 Research Methodology and Assumptions

2.1 Research Methodology

Research has its special purpose in solving various operational and planning problems in business and industry. We, at Fior Market Research (FMR), incorporate scientific and systematic research procedures for market insight and industry analysis for overall business success. The analysis consists of looking at the market form a microscopic level wherein we utilize statistical tools that helps us examine the data effectively and with extreme precision. Current trends and actual strategic developments are carefully considered to identify key elements driving the market and the conceivable future course of the market.

FMR offers comprehensive research and analysis, based on a wide assortment of factual insights gained through interviews with CXOs and U.S experts and secondary data from reliable sources. Our analysts and industry specialist assume vital roles in building up statistical tools and analysis models, which are used to analyze the data and arrive at accurate insights with exceedingly informative research discoveries.

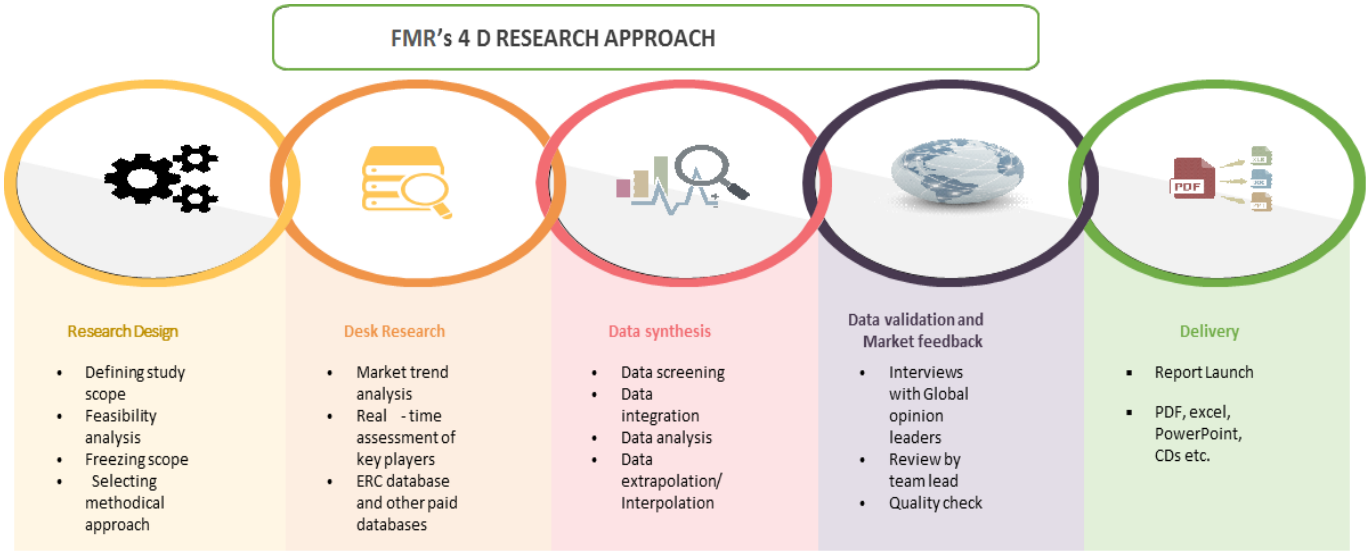
For this research report, 33 hours of interviews and discussions have been conducted with stakeholders that include both upstream and downstream participants belonging to the foremost geographies. Over 1,500 product literatures, industry releases, annual reports, and other such documents of key industry participants have been reviewed for generating high-value industry insights.

2.2 FMR Desk Research

Desk Research consists of data water distribution using existing sources such as press release, the Internet, analytical reports and statistical publications. This is then followed by cross referencing and collation of data.

FMR has extensive experience in conducting desk research using a vast array of resources such as:

- SEC filings, annual reports, company news and press release, technology and product specs, Government and economic data, patent analysis, case studies, and reference customers.
- Our in-house library (that includes both physical library and e-library includes thousands of literature and related documents that are studied to analyze a market.
- Statistical database from reliable data providers is utilized as a reference for our estimations.



*Primary research is conducted throughout the research process.

2.2.1 FMR Data Synthesis

The data is collected with consideration to the heterogeneity of sources. Robust scientific techniques are in place for synthesizing disparate data sets and provide the essential contextual information that can orient market strategies.

FMR has extensive experience in data synthesis where the data passes through various stages:

- Data Screening: FMR employs objective and systematic data screening processes involving repeated cycles of quality checks, screening and suspect analysis.
- Data Integration: Integrating multiple data streams is necessary to produce research studies that provide in-depth picture to the clients. These data streams come from multiple research studies and our in-house database. After screening of the data, our analysts conduct creative integration of data sets, optimizing connections between integrated surveys and syndicated data sources.
- Data interpolation/extrapolation: With data interpolation, it is made sure that there is no gap in the market data. Successful trend analysis is done by our analysts using extrapolation techniques, which provide the best possible forecasts for the market.

2.2.2 Data Validation And Market Feedback

FMR interacts with leading companies and experts of the concerned domain to develop the analyst team's market understanding and expertise. It improves and substantiates every single data presented in the market reports.
The data validation interview and discussion panels are typically composed of the most experienced industry members. The participants include, however, are not limited to:

- CXOs and VPs of leading companies' specific to sector
- Purchasing managers, technical personnel, end-users
- Key opinion leaders such as investment bankers, and industry consultants

2.2.3 FMR Data Sources

The market research reports prepared by FMR cover U.S markets. We have professional corporate relations with various companies as well as strategic alliance with freelance consultants from across the globe. We also have contractual agreements with various reputed data providers from various domains such as financials, business and trade information etc. We also source data and analyses trends based on information received from supply side and demand side intermediaries in the value chain.
Apart from these third-party sources, we have our in-house library of qualitative and quantitative information. Our in-house database includes market data for various industry and domains. These data are updated on regular basis as per the changing market scenario. Moreover, we always validate our data and findings through primary respondents from all the major regions we are working on. Below is a list of data sources that we referred to during the course of this particular project: (though not limited to):-

- ✓ Company websites
- ✓ Sec filings
- ✓ Form 10k/8k

- ✓ Annual reports
- ✓ Trade association data
- ✓ Conferences held worldwide
- ✓ Interview of conference speakers
- ✓ Government regulatory bodies
- ✓ FMR in-house database
- ✓ Third party consultants
- ✓ FMR consultants
- ✓ Supply side intermediaries demand side intermediaries
- ✓ Statistics companies (hoovers, Factiva, etc.)
- ✓ Primary respondents
- ✓ Survey data
- ✓ Case studies

Chapter 3 Executive Summary

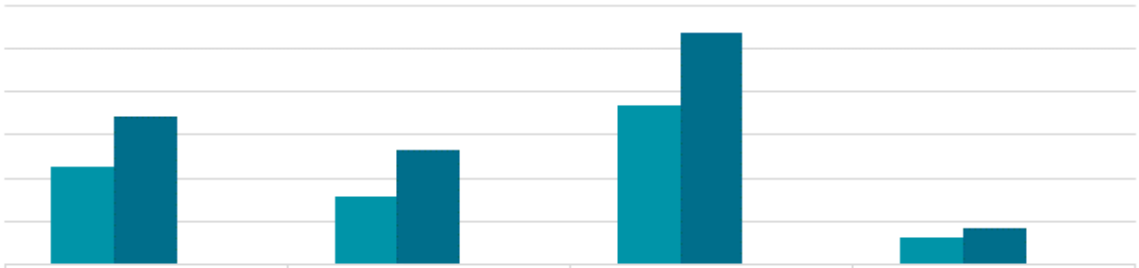
The North America recycled asphalt shingles (RAS) market is valued at USD 811.80 million in 2020 to USD 1,227.45 million by 2028 growing at a CAGR of 5.8% from 2021 to 2028. Demand from construction sector is one of the factors driving the market. Asphalt shingles are broadly used as roofing covers. In the US, around 11 million tons of asphalt roofing shingle scrap is produced every year. These asphalt shingle scraps are known as Recycled Asphalt Shingles (RAS). The Recycled shingles are the manufacturer's scrap or the recovered material from the old roofs. These shingle scraps, after proper processing, are used as a modifier in the Hot Mix Asphalt (MHA) and Warm Mix Asphalt (WMA). Asphalt Shingles could be both organic felt and fiberglass type.

The study delivers a comprehensive analysis of genre type, application and countries. The type segment is divided into black, brown, gray, and white. The gray segment was valued at USD 367.53 Million in the year 2020. The application segment includes commercial building, civil building, and others. The civil building segment was valued at USD 387.44 Million in the year 2020. The country segment is classified into U.S., Canada and Mexico. U.S. was valued at USD 647.54 Million in the year 2020.

Key players in the North America recycled asphalt shingles (RAS) market are CRH Americas Materials, Owens Corning, GAF Materials, CERTAINTEED, Cherry Companies, Malarkey and Lone Star Paving among others.

3.1 North America Recycled Asphalt Shingles (RAS) Market Revenue By Type

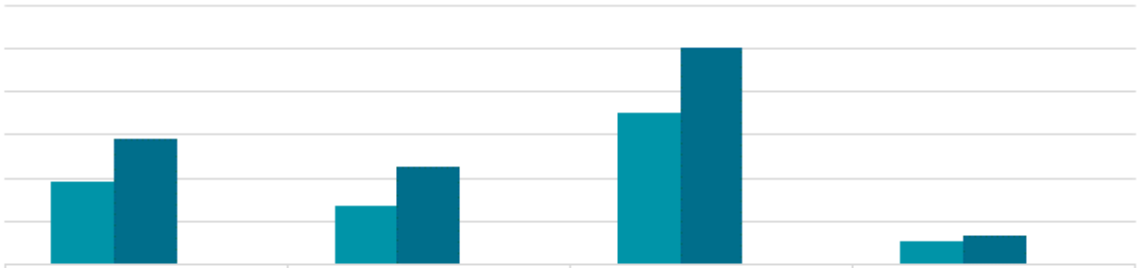
FIG. 2 North America Recycled Asphalt Shingles (RAS) Market By Type,2020 & 2028, Revenue (USD Million)



	Black	Brown	Gray	White
2020	224.88	155.28	367.53	64.11
2028	343.58	262.72	537.05	84.09
CAGR	5.9%	7.3%	5.3%	3.9%

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

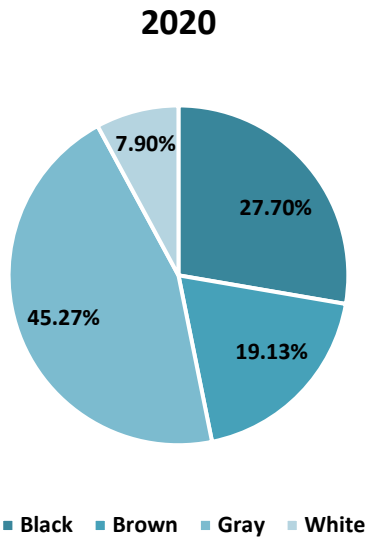
FIG. 3 North America Recycled Asphalt Shingles (RAS) Market By Type,2020 & 2028, Sales (K Tons)



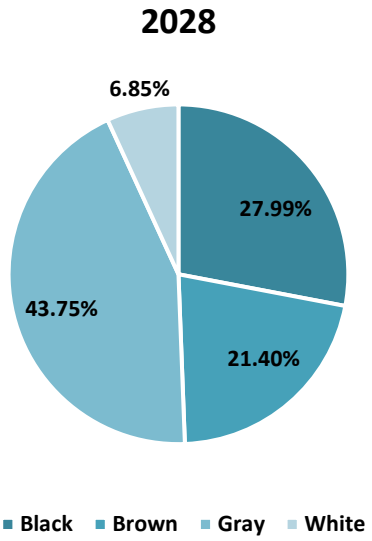
	Black	Brown	Gray	White
2020	3857	2725	7019	1046
2028	5785	4526	10069	1361
CAGR	5.7%	7.0%	5.1%	3.8%

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

FIG. 4 North America Recycled Asphalt Shingles (RAS) Revenue Market Share By Type, 2020 & 2028

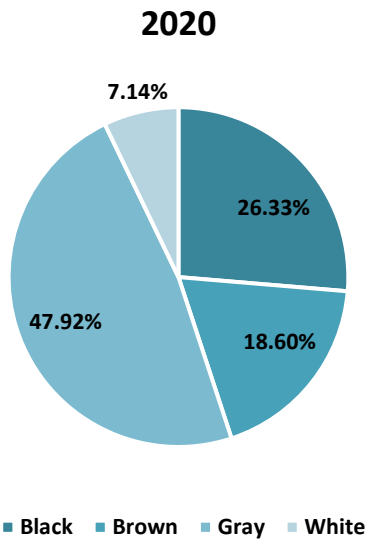


Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

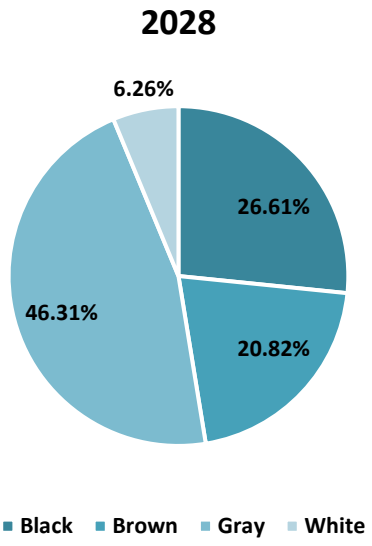


Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

FIG. 5 North America Recycled Asphalt Shingles (RAS) Sales Market Share By Type, 2020 & 2028



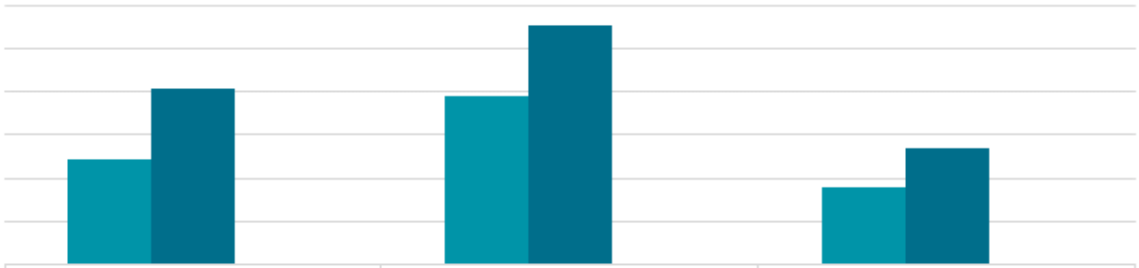
Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021



Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

3.2 North America Recycled Asphalt Shingles (RAS) Market Revenue By Application

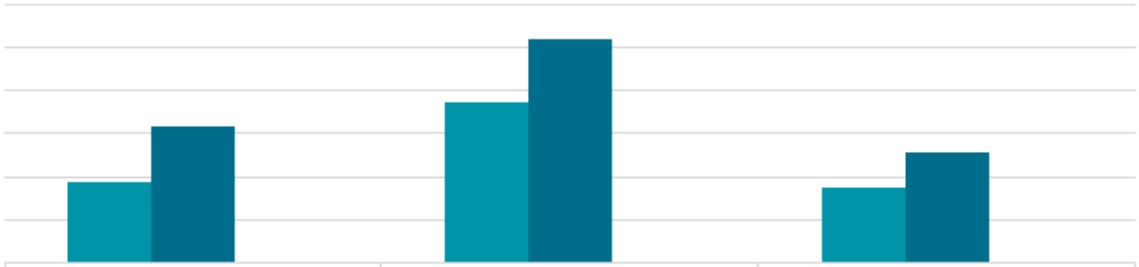
FIG. 6 North America Recycled Asphalt Shingles (RAS) Market By Application,2020 & 2028, Revenue (USD Million)



	Commercial Building	Civil Building	Others
2020	245.04	387.44	179.32
2028	406.75	551.15	269.55
CAGR	7.0%	5.0%	5.7%

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

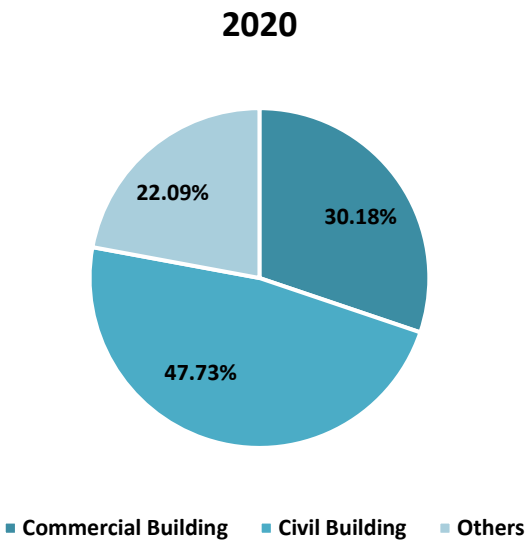
FIG. 7 North America Recycled Asphalt Shingles (RAS) Market By Application,2020 & 2028, Sales (K Tons)



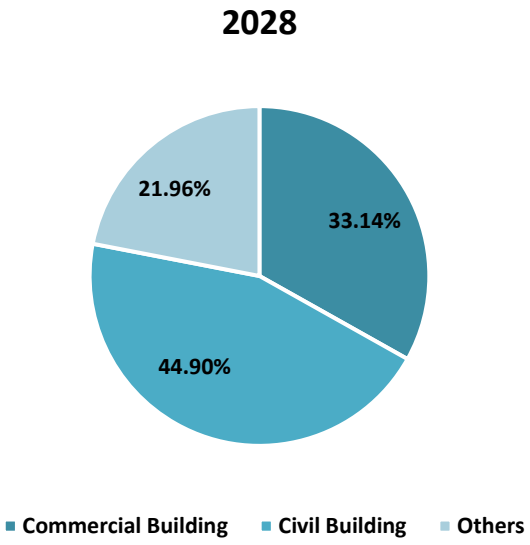
	Commercial Building	Civil Building	Others
2020	3779	7414	3454
2028	6305	10354	5083
CAGR	7.1%	4.8%	5.4%

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

FIG. 8 North America Recycled Asphalt Shingles (RAS) Revenue Market Share By Application, 2020 & 2028

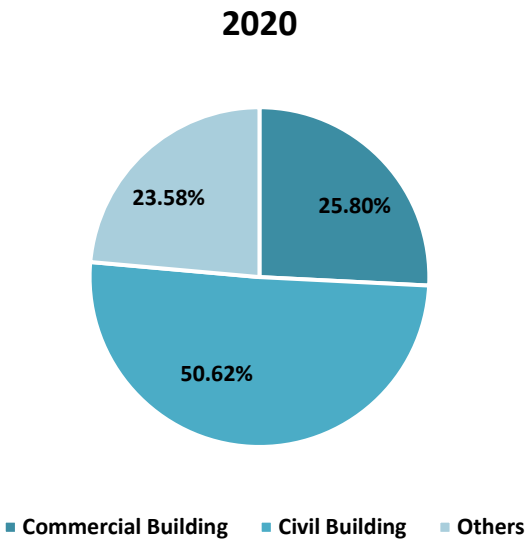


Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021



Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

FIG. 9 North America Recycled Asphalt Shingles (RAS) Sales Market Share By Application, 2020 & 2028



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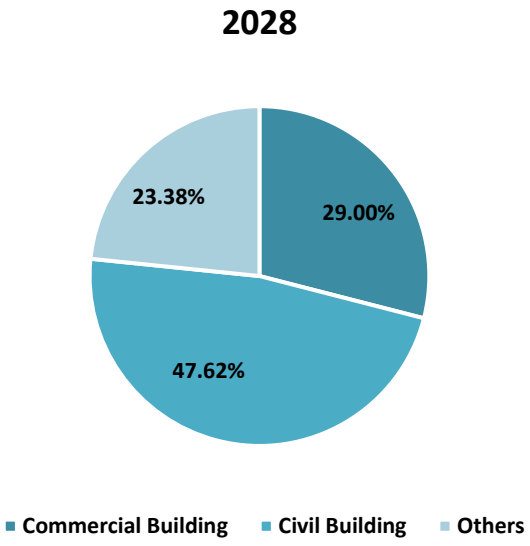


Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

Chapter 4 Premium Insights

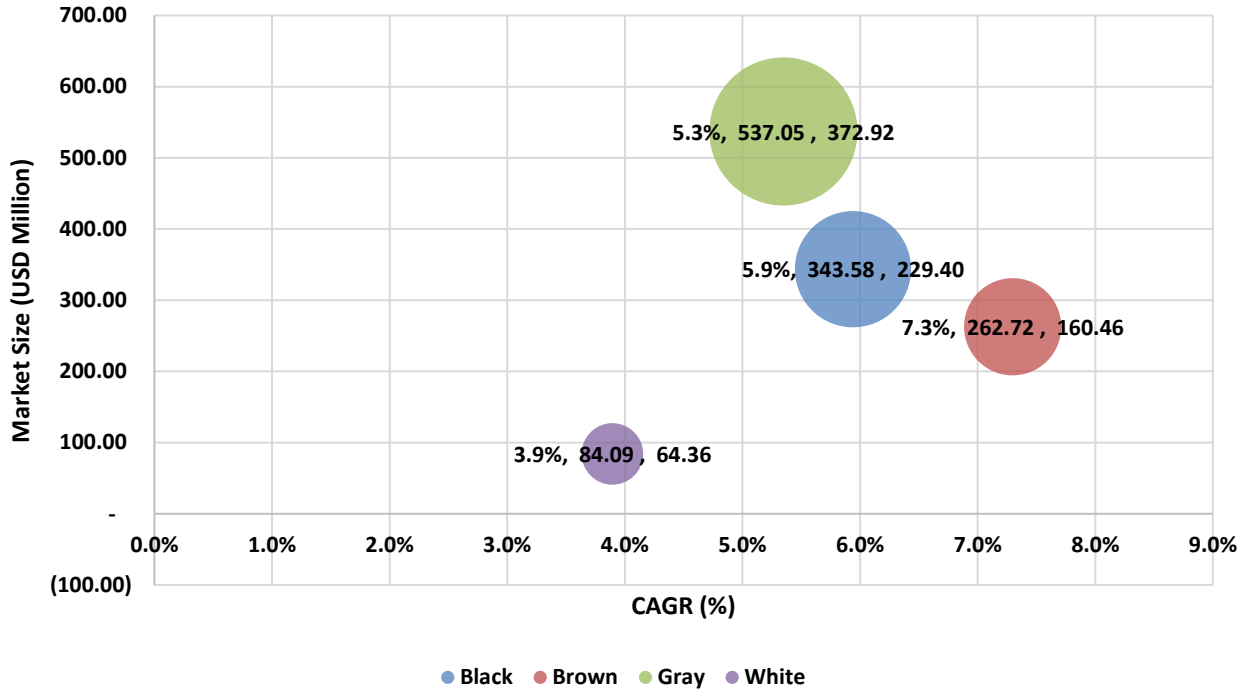
4.1 Impact of Covid-19 on the market

In the middle of Covid-19, the construction industry was deeply impacted because of many obstacles like contractual obligations, resource availability, health and safety measures, deliverables and cancellations or project delays, among others. Based on one of the studies on the construction industry, the perception of change about schedule impacts in the next quarter would affect the residential and commercial construction sectors all across the world. This pandemic has caused disruption in the residential sector. The supply chain is affected the most. The surge in the number of cases in North America has resulted in the suspension of residential construction projects; only the projects that are still going on and were considered essential by the government authorities were not stopped. In the present scenario, the builder and contractors are both struggling in getting permits for both new and in-process construction projects. The supply chain disruption, shortage of subcontractors and materials are the factors that are affecting the construction market. Many companies are terminating contracts to control the expenses. However, few civil engineering activities are still going on, and in some countries, there was no complete lockdown, so construction companies are continuing their work in those regions to control the financial damage. But these activities speed will be affected due to supply chain disruptions, which would lead to a shortage of materials and equipment. For controlling the expenses, many administrations and public companies are terminating the contracts. Also, there was a limitation of staff and availability of equipment in the manufacturing facilities due to the disrupted supply chain. All these factors have slowed down the recycled Asphalt Shingles market.

4.2 Top Investment Pockets

4.2.1 Market Attractiveness Analysis By Type

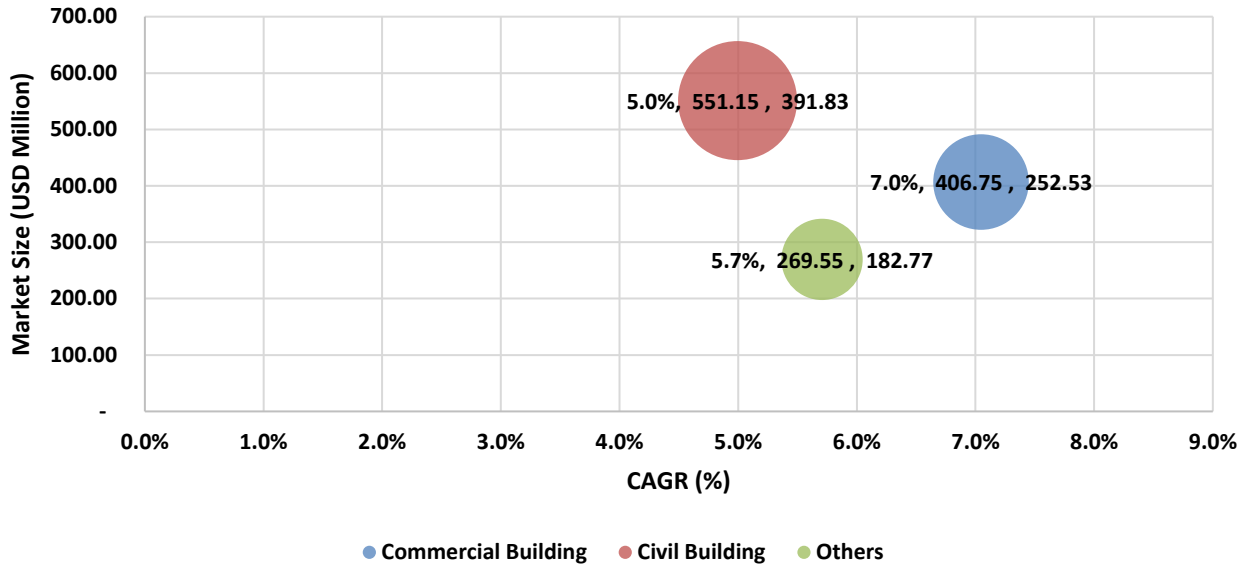
FIG. 10 Market Attractiveness Analysis By Type, Revenue (USD Million) CAGR (%), 2021-2028



Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

4.2.2 Market Attractiveness Analysis By Application

FIG. 11 Market Attractiveness Analysis By Application, Revenue (USD Million) CAGR (%), 2021-2028



Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

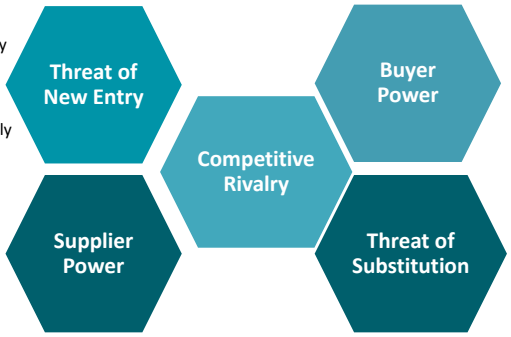
4.3 Porter Five Forces Analysis

Threat of New Entry: Low

- Capital intensive nature of the industry
- Specialist Knowledge
- Economies of Scale
- The effective distribution of supply chain

Supplier Power: Low

- Switching cost
- Many Suppliers
- Quality of the Product
- Advancement in technologies



Buyer Power: High

- Many organization provide similar products
- More Competition
- Growth in demand from asphalt pavement and improved HMA mixes

Threat of Substitution: Low

- Substitute Product

Competitive Rivalry: High

- Number of competitors
- Competitive market
- Switching Cost
- Customer loyalty

4.3.1 The Threat of new Entry- Low

The threat of new entry is low. It has become very important for recycled Asphalt Shingles related companies to focus on research and development and patent related laws to sustain their position in the market. The investment is high for tear-off shingles to recycle. Also, there are stringent government regulations to follow, which could act as a high barrier. Other than this, there are many other challenges like drawing up appropriate distribution strategies, selecting the right products, anticipating competition, among others, are limiting the entry of new barriers in the market. The company need specialist knowledge and experience to understand the need of requirement, and also the big organizations have good economies of scale and also have a good distribution network, which acts as an advantage for the big firms.

4.3.2 Supplier Power- Low

The supplier bargaining power is low. The production of recycled Asphalt Shingles and its end products require various types of raw materials. There are many suppliers present in the market. Instead of buying raw materials at a high cost, these companies can switch from one company to another. But also the company prefers long term relationships with the suppliers. The advancement in technologies and focus on R&D is increasing the demand for raw materials, providing little upper hand at present. The suppliers having good relationships with the client and deliver quality standard materials are mostly preferred. The supplier should be flexible enough to accept the fluctuations in the requirement.

4.3.3 Buyer's Power – High

The Buyer's power is high. The growing demand for pavement, road and construction are some of the factors driving the recycled Asphalt Shingles market. Suppose one customer has a large enough impact to affect a company's margin and volumes, then they hold substantial power. If the concentration of buyers is more, hence the company's bargaining power is high. All firms in this market have almost similar products; hence the bargaining power of buyers is high. Customers are not concerned about the production cost of the product. The focus of the customer is to get the quality of the product at an economical price, and there are many companies to choose from; this makes the buyer power higher.

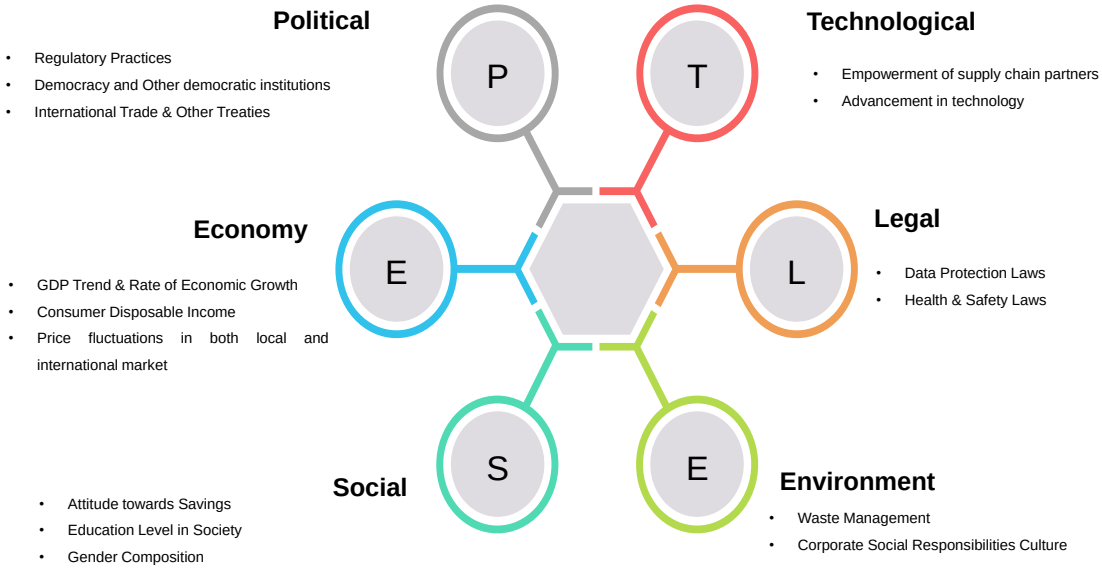
4.3.4 Threat of substitution- Low

The threat of substitution is low. RAS is broadly used in the construction of road, pavement, etc., but the government is looking for the greener alternative like the use of permeable pavement have been started in Canada. Its use is increasing with the surge in the number of municipalities focusing on better stormwater management practices. This factor is restricting the RAS market.

4.3.5 Competitive Rivalry- High

Competitive Rivalry is high in this market. Big firms have an intense competitive rivalry, as all major world players operate almost everywhere. All major world players are global. Competition is deep as organizations fight with each other on the quoted price to win a contract amid high price sensitivity. Low switching costs from buyers increase competition.

4.4 PESTEL Analysis



4.4.1 Political

4.4.1.1 Regulatory Practices

The regulatory practices must be streamlined with global norms, which would help the country to improve its ease of doing business. This would attract the industries to start investing in the region, and this would help the organization in expanding its market share.

4.4.1.2 Democracy & Other Democratic Institutions

The democratic institutions are needed to be strengthened further so that businesses such as RAS organizations would get a friendly and helpful environment and can thrive in an open, transparent, and stable political environment. Strengthening democratic institutions will foster greater transparency and reduce the level of corruption in the country. Such conditions are fruitful for any business.

4.4.1.3 International Trade & Other Treaties

The country must have a good record of adhering to international treaties it has done with various global partners. This would attract many organizations to invest in the country. The government of each party must adhere to the treaties done by previous governments so that there would be consistency in both rules of law and regulations. The organization also should adhere to these international trade & other treaties.

4.4.2 Economy

4.4.2.1 GDP Trend & Rate of Economic Growth

The higher GDP growth rate signals growing demand in the economy. This means the disposable income of the people would increase. They would in turn lead to rapid urbanization and industrialization. The organization can leverage this trend by expanding its product range and targeting new customers. One way to start is by closely mapping the changes in – consumer buying behavior and emerging value proposition.

4.4.2.2 Consumer Disposable Income

The household income of the country plays a vital role in targeting the market. This surge in disposable income would lead to more buying of goods and services, which would help in the expansion of infrastructure. The RAS organizations can leverage this trend to expand the market beyond its traditional customers by employing a differentiated marketing campaign.

4.4.2.3 Price Fluctuations in both Local and International Markets

Compared to the level of quantitative easing in the last decade, the prices of the products and prices of overall products have remained sticky in the US market. The organization should consider the fact that at deficit levels of the United States in an emerging economy can lead to rampant inflation and serious risks of currency depreciation.

4.4.3 Social

4.4.3.1 Attitude Towards Savings

The culture of saving in the US and Mexico is totally different, where the savings rate in Mexico is around 24%; it is well below 15% in the United States. This culture of consumption and savings impacts both types of consumption and magnitude of consumption.

4.4.3.2 Education Level in Society

The education level of society impacts both the quality of jobs and the level of income. A high level of education often results in better jobs, higher income; education will help people to participate in the economy leads to urbanization. The organization could exploit this to expand the market.

4.4.3.3 Gender Composition

The organization can use the gender composition of the labor market to understand the level of liberal nature of the society, women's rights, and women’s say in the matter of societal issues and consumption decisions. The gender composition of the labor market is a good indicator of the disposal income of the household, priorities of the households, and related needs. This could be used to analyze society. The more liberal the society, the better it would be for the organization to invest in the region.

4.4.4 Technological

4.4.4.1 Advancement in Technology

The organization should build a strategy that can integrate societal values, infrastructure, and the company's business model. The organization must analyze the technological advancement in the region to understand the requirement. Understanding the infrastructure of the region would help the organization to expand its market share.

4.4.4.2 Empowerment of Supply Chain Partners

The organization should analyze areas where technology can empower supply chain partners. This can help the organization to bring in more transparency and make the supply chain more flexible.

4.4.5 Legal

4.4.5.1 Data Protection Laws

The organization needs to assess what are the data laws in the country and what it needs to do to comply with them. These laws are there to protect the ideas and patents of companies which are only profiting because of that information.

4.4.5.2 Health & Safety Laws

The organization must be aware of the health and safety laws in the country and the steps needed to comply with them. Different countries have different attitudes towards health and safety, so it is better for the organization to conduct thorough research before entering the market.

4.4.6 Environment

4.4.6.1 Waste Management

The policies regarding waste management in the market must be updated by the organization in accordance with the laws, and the rules must be followed by the organization in the market.

4.4.6.2 Corporate Social Responsibilities Culture

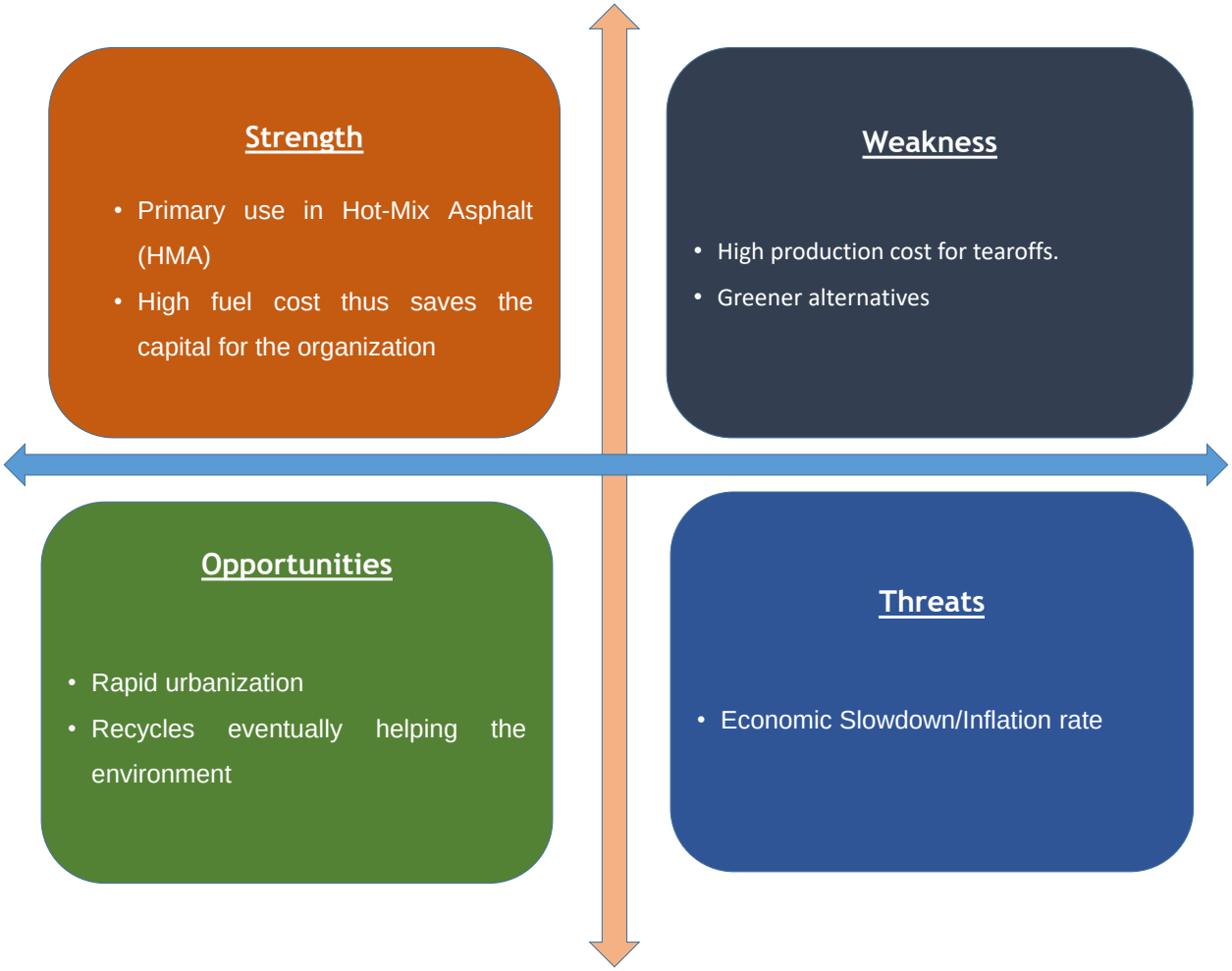
Every organization has some sustainability laws and regulations which they can oblige by. Every single employee in the organization has to maintain those laws so as to live in a sustainable environment.

4.5 Industry Trends

Based on one of the studies, the National Asphalt Pavement Association (NAPA), with the cooperation of the Federal Highway Administration (FHWA), tracked the use of recycled materials, especially the use of RAS in asphalt mixtures since 2009. In 2019 there was an estimation of around 702,000 tons of RAS used in asphalt mixtures in the US. In 2014, the use of RAS had increased to 1,964,000 tons. In 2017 it was estimated to be around 944,000 tons which was a 34.5% increase compared to 2009 and around 52% decrease for the peak use of RAS in 2014. In 2009 the asphalt producers in 22 states stated of using RAS in asphalt mixtures. In 2017, the asphalt producers of 29 states reported using RAS. The highest point was in 2013 when 38 states reported using RAS. Based on the report by the Asphalt Roofing Manufacturers Association in 2015, around 13.2 million tons of waste shingles are generated in the US every year. Based on another study, millions of tons of asphalt shingles get disposed of in the US yearly, and majorly these are roof tear-offs which hold for about 7 to 10 million tons every year. The manufactures are producing a tenth of this amount in the factory waste. The tear-offs are getting produced almost everywhere in the US, and manufacturer waste is only produced at shingle manufacturing facilities. Around 30 states have such facilities that have led to manufacturer wasted shingles being more available in these regions. Based on one of the studies of municipal waste in Winsconsin, it was observed that the shingles were the third-highest source of landfill material after wood and food scraps. There is a trend observed that the recycled asphalt shingles (RAS) in asphalt pavement all across the US is gradually increasing. The use of RAS saves money, conserve resources, and helps in producing good quality pavements. There are twofold benefits of using RAS in pavements, the recycled shingles conserve the space in the crowded landfills and reuse valuable resources like asphalt binder and fine aggregate. It has been observed that the states and local agencies of the US use RAS on the county, city, and state roads. The RAS is getting used in aggregate base courses and for the granular base stabilization for the local roads. All these factors are propelling the growth of the Recycled Asphalt Shingles (RAS) market. In many US states, the paving contractors are using RAS for the private driveways, parking lots, and in HMA mixes for many different uses like patching and temporary roads. For instance, commercial paving of Scarborough city in Maine regularly uses RAS as the base, and it is used as subbase material on private and city

projects for many years. Another instance is that one of the Florida contractors reported using recycled shingles for eight years for the city streets and county roads. There seems to be a promising future in terms of local government. For the last 10 years, Minnesota DOT (MnDOT) has been involved in laboratory and field tests with RAS for hiking and biking trails and on county and road sections. The test has shown positive results. All these factors are propelling the Recycled Asphalt Shingles Market.

4.6 SWOT Analysis



Chapter 5 Market Dynamics

5.1 Drivers

5.1.1 Environmental Benefits and Saving of Money

The asphalt companies are saving money by recycling asphalt shingles and asphalt pavements. Based on one of the studies in 2019, around 24 million barrels of asphalt binder got conserved using the recycling of asphalt shingles and asphalt pavement. Some of the environmental benefits are like the recycling of old asphalt decreases the amount of new oil required and therefore reduces the dependence on foreign oil. Also, recycling helps in saving the construction material waste as the recycled material was not sent to landfills. Some of the economic benefits are that the taxpayers are saving money using the recycling of asphalt. Contractors are saving by reducing energy, materials, and transportation costs. Asphalt can be recycled multiple times. All these factors are driving the Recycled Asphalt Shingles Market.

5.1.2 Demand for commercial building and asphalt pavement

The recycled asphalt shingles have many benefits in the production of Hot-Mix Asphalt (HMA). Thus by reusing the asphalt from shingles, the asphalt manufacturers are reducing the cost and also improving the quality of their asphalt pavement. The use of recycled shingles offers the source of aggregate that reduces the requirement for mined aggregate. Also, the quality of pavement gets improved as mentioned due to stronger cracking resistance and rutting as there are added minerals fillers and organic fibers used in the shingles. Therefore reduction in the demand for new asphalt pavement and improved HMA mixes. There is a big advantage of recycling as one ton of asphalt shingles recycled is equivalent to one barrel of oil; thus, 11 million tons of waste could be recycled and saving 11 million barrels of oil as there is no need to create new asphalt. Shingle is used in the building, and then it is removed, sorted in the tear-off, and then transported to a collection point. The shingle tear-offs are converted into RAS material in the recycling center, and thus the post-consumer waste RAS is processed and incorporated into the manufacturing process of Shingles, which are again used in the buildings. All these factors are propelling the Recycled Asphalt Shingles Market.

5.2 Restraints

5.2.1 Material issues

The shingle scraps from the roofing manufacturer are generally clean and therefore need minimum handling before the processing. However tear-off shingles must be sorted, and the waste materials like wood, metal, and nails must be removed before it is processed. Therefore the cost of using tear-offs is more in comparison to the manufacturer's scrap shingles. The handling and cleaning of tear-offs are making the cost higher. The asbestos monitoring and more additions of soft binder in tear-offs are also an additional cost. All these factors are acting as a restraint for the market.

5.3 Opportunities

5.3.1 Development projects in North America

Based on one of the reports in 2014, one in every nine US road bridges was deficient. Similarly, the report considered 42% of the major urban highways congested, and 32% of the major roads were reported in poor conditions. For the up-gradation of US road transport, the government introduced the Surface Transportation Reauthorization Bill in 2013, which had a worth of around USD 476 billion for 6 years period. This was planned to finance all bridges, highways, and mass transit construction projects till 2018. The bill also included the investment of USD 305 billion for six years that were planned to be used in the reconstruction of roads, bridges, and up-gradation of the highway system, showing a 34% increase compared to the previous bill. The US construction industry was estimated a CAGR of around 7.12% from 2014 to 2018 due to a surge in the economy and surge in government spending on public infrastructure. Also, the residential construction sector in the US was also expanding based on Euromonitor International in 2014 due to a surge in the permit-issuing authorization in 2013 by 19%. Also, in Mexico, the government has taken the initiative to improve the transport infrastructure, and value adds industries along with taking care of population expansion. All these factors would eventually drive the Recycled Asphalt Shingles Market in the forecasting period.

Chapter 6 North America Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Type

6.1 Segment Overview

TABLE 1 North America Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Type, 2018-2028, Revenue (USD Million) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Black	235.38	247.02	224.88	229.40	236.74	246.86
Brown	158.39	168.39	155.28	160.46	167.73	177.15
Gray	388.75	405.85	367.53	372.92	382.78	396.96
White	69.13	71.50	64.11	64.36	65.32	66.92
Total	**851.65**	**892.76**	**811.80**	**827.13**	**852.57**	**887.89**

	2024	2025	2026	2027	2028	CAGR
Black	260.35	277.58	297.58	319.61	343.58	**5.9%**
Brown	189.23	204.34	221.87	241.33	262.72	**7.3%**
Gray	416.35	441.42	470.56	502.50	537.05	**5.3%**
White	69.28	72.45	76.11	80.01	84.09	**3.9%**
Total	**935.21**	**995.79**	**1,066.12**	**1,143.44**	**1,227.45**	**5.8%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 2 North America Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Type, 2018-2028, Volume (K Tons) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Black	4,054	4,246	3,857	3,926	4,043	4,207
Brown	2,791	2,961	2,725	2,810	2,931	3,088
Gray	7,454	7,767	7,019	7,106	7,279	7,532
White	1,130	1,168	1,046	1,049	1,064	1,089
Total	**15,428**	**16,141**	**14,647**	**14,892**	**15,316**	**15,915**

	2024	2025	2026	2027	2028	CAGR
Black	4,426	4,708	5,036	5,395	5,785	**5.7%**
Brown	3,291	3,546	3,841	4,168	4,526	**7.0%**
Gray	7,881	8,337	8,866	9,445	10,069	**5.1%**
White	1,126	1,177	1,235	1,297	1,361	**3.8%**
Total	**16,726**	**17,768**	**18,978**	**20,305**	**21,741**	**5.6%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

6.2 Black

Asphalt shingle roofs protect millions of homes in the United States. Around 75% of all houses in North America have shingle roofs installed on them. They are not only appealing, but also resistant to damage against the elements. With proper installation and maintenance, an asphalt roof can last for decades. Shingle color for beige or cream-colored houses is mostly preferred black, green and blue among others in solid colors or an exciting color blend, as long as it doesn't clash with the other exterior elements.

6.3 Brown

Brick homes are more prevalent in northern areas of US; in southern areas, frame or stucco homes tend to be more common. Other facings often used in both areas include masonry, stone veneer, wood logs, wood or vinyl siding. Home's brickwork is a fairly uniform red tone, the look and texture of these shingles in various shades of grey work especially well. If the brickwork had had a patchwork of various colors, this choice might have clashed. Suggested shingle colors for red brick houses are dark brown, black, green etc.

6.4 Gray

The right color and style of roofing shingles will also make a great first impression from the front of the home, enhancing its curb appeal and potentially boosting its resale value. If the home is in the Pacific Northwest, one may wish to choose roofing shingles in shades or combos of grey, brown or green to harmonize with the natural environment of sea and evergreens.

6.5 White

The solar reflectance of all commercial asphalt shingles is rather low. Premium white shingles are only about 30% reflective, and other colors reflect less.
White houses allow the roof to be a truly blank canvas. Almost any color will look good; it comes down to other variables, such as the neighborhood, home's architectural style and personal preference. Shingle colors for white houses include white, green, blue etc.

Chapter 7 North America Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Application

7.1 Segment Overview

TABLE 3 North America Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Application, 2018-2028, Revenue (USD Million) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Commercial Building	251.44	266.49	245.04	252.53	263.30	277.39
Civil Building	412.52	429.26	387.44	391.83	400.86	414.32
Others	187.69	197.01	179.32	182.77	188.41	196.18
Total	**851.65**	**892.76**	**811.80**	**827.13**	**852.57**	**887.89**

	2024	2025	2026	2027	2028	CAGR
Commercial Building	295.58	318.42	344.97	374.41	406.75	**7.0%**
Civil Building	433.10	457.63	486.20	517.44	551.15	**5.0%**
Others	206.54	219.73	234.95	251.59	269.55	**5.7%**
Total	**935.21**	**995.79**	**1,066.12**	**1,143.44**	**1,227.45**	**5.8%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 4 North America Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Application, 2018-2028, Volume (K Tons) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Commercial Building	3,870	4,106	3,779	3,897	4,067	4,287
Civil Building	7,926	8,231	7,414	7,482	7,637	7,877
Others	3,632	3,804	3,454	3,513	3,612	3,751
Total	**15,428**	**16,141**	**14,647**	**14,892**	**15,316**	**15,915**

	2024	2025	2026	2027	2028	CAGR
Commercial Building	4,572	4,928	5,342	5,801	6,305	**7.1%**
Civil Building	8,215	8,660	9,179	9,745	10,354	**4.8%**
Others	3,939	4,179	4,456	4,758	5,083	**5.4%**
Total	**16,726**	**17,768**	**18,978**	**20,305**	**21,741**	**5.6%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

7.2 Commercial Building

Commercial buildings are buildings that are used for commercial purposes, and include office buildings, warehouses, and retail buildings. A well-designed shingle roofing system can improve the building's curb appeal, lower utility costs, and protect the structural integrity of the building.

7.3 Civil Building

Civil building construction is the process of adding structure to real property. The vast majority of building construction projects are small renovations, such as addition of a room, or renovation of a bathroom. Often, the owner of the property acts as laborer, paymaster, and design team for the entire project. In the north of US, natural sunlight has a cool, bluish cast to it; the farther south one goes, the warmer and more reddish the character of the light becomes. The same color blend of cool greys and icy blues shingles that looks so fantastic on a home in New England might look washed out in the orange sunset glow of the Desert Southwest or the tropical light of Florida.

7.4 Others

In many US states, the paving contractors are using RAS for the private driveways, parking lots, and in HMA mixes for many different uses like patching and temporary roads. For instance, commercial paving of Scarborough city in Maine regularly uses RAS as the base, and it is used as subbase material on private and city projects for many years. Another instance is that one of the Florida contractors reported using recycled shingles for eight years for the city streets and county roads.

Chapter 8 North America Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Country

8.1 Segment Overview

TABLE 5 North America Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Country, 2018-2028, Revenue (USD Million) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
U.S.	677.23	711.00	647.54	660.83	682.27	711.74
Canada	119.83	125.23	113.52	115.29	118.44	122.93
Mexico	54.59	56.53	50.75	51.02	51.86	53.23
Total	**851.65**	**892.76**	**811.80**	**827.13**	**852.57**	**887.89**

	2024	2025	2026	2027	2028	CAGR
U.S.	750.96	801.01	859.13	923.13	992.81	**6.0%**
Canada	129.01	136.87	145.98	155.98	166.79	**5.4%**
Mexico	55.24	57.91	61.01	64.33	67.84	**4.2%**
Total	**935.21**	**995.79**	**1,066.12**	**1,143.44**	**1,227.45**	**5.8%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 6 North America Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Country, 2018-2028, Volume (K Tons) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
U.S.	11,915	12,484	11,346	11,555	11,904	12,390
Canada	2,263	2,361	2,135	2,164	2,218	2,297
Mexico	1,250	1,296	1,165	1,173	1,194	1,228
Total	**15,428**	**16,141**	**14,647**	**14,892**	**15,316**	**15,915**

	2024	2025	2026	2027	2028	CAGR
U.S.	13,044	13,881	14,853	15,920	17,079	**5.7%**
Canada	2,406	2,546	2,709	2,888	3,080	**5.2%**
Mexico	1,276	1,341	1,416	1,496	1,582	**4.4%**
Total	**16,726**	**17,768**	**18,978**	**20,305**	**21,741**	**5.6%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

8.1.1 U.S.

TABLE 7 U.S. Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Type, 2018-2028, Revenue (USD Million) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Black	187.46	197.02	179.64	183.54	189.72	198.15
Brown	124.81	132.90	122.76	127.06	133.05	140.77
Gray	310.24	324.37	294.20	298.99	307.40	319.32
White	54.72	56.71	50.94	51.24	52.11	53.50
Total	**677.23**	**711.00**	**647.54**	**660.83**	**682.27**	**711.74**

	2024	2025	2026	2027	2028	CAGR
Black	209.34	223.57	240.11	258.34	278.23	**6.1%**
Brown	150.64	162.96	177.27	193.19	210.73	**7.5%**
Gray	335.49	356.31	380.51	407.07	435.88	**5.5%**
White	55.50	58.17	61.24	64.52	67.98	**4.1%**
Total	**750.96**	**801.01**	**859.13**	**923.13**	**992.81**	**6.0%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 8 U.S. Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Type, 2018-2028, Volume (K Tons) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Black	3,138	3,291	2,994	3,053	3,149	3,282
Brown	2,133	2,267	2,089	2,158	2,255	2,380
Gray	5,779	6,030	5,458	5,535	5,678	5,885
White	866	897	805	809	822	843
Total	**11,915**	**12,484**	**11,346**	**11,555**	**11,904**	**12,390**

	2024	2025	2026	2027	2028	CAGR
Black	3,459	3,686	3,949	4,238	4,553	**5.9%**
Brown	2,541	2,743	2,977	3,236	3,521	**7.2%**
Gray	6,169	6,537	6,964	7,433	7,938	**5.3%**
White	874	915	963	1,013	1,066	**4.0%**
Total	**13,044**	**13,881**	**14,853**	**15,920**	**17,079**	**5.7%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 9 U.S. Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Application, 2018-2028, Revenue (USD Million) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Commercial Building	200.80	213.13	196.28	202.60	211.58	223.26
Civil Building	328.12	341.94	309.11	313.11	320.85	332.18
Others	148.31	155.92	142.14	145.12	149.85	156.29
Total	**677.23**	**711.00**	**647.54**	**660.83**	**682.27**	**711.74**

	2024	2025	2026	2027	2028	CAGR
Commercial Building	238.31	257.17	279.10	303.46	330.28	**7.2%**
Civil Building	347.83	368.18	391.86	417.79	445.84	**5.2%**
Others	164.83	175.67	188.17	201.88	216.70	**5.9%**
Total	**750.96**	**801.01**	**859.13**	**923.13**	**992.81**	**6.0%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 10 U.S. Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Application, 2018-2028, Volume (K Tons) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Commercial Building	3,004	3,191	2,941	3,039	3,176	3,354
Civil Building	6,125	6,370	5,746	5,808	5,939	6,135
Others	2,787	2,923	2,659	2,708	2,789	2,902
Total	**11,915**	**12,484**	**11,346**	**11,555**	**11,904**	**12,390**

	2024	2025	2026	2027	2028	CAGR
Commercial Building	3,582	3,868	4,201	4,570	4,976	**7.3%**
Civil Building	6,409	6,769	7,187	7,644	8,137	**4.9%**
Others	3,052	3,244	3,465	3,707	3,967	**5.6%**
Total	**13,044**	**13,881**	**14,853**	**15,920**	**17,079**	**5.7%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

8.1.2 Canada

TABLE 11 Canada Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Type, 2018-2028, Revenue (USD Million) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Black	33.44	34.99	31.75	32.29	33.21	34.51
Brown	22.87	24.25	22.29	22.96	23.92	25.18
Gray	53.63	55.82	50.39	50.97	52.14	53.89
White	9.87	10.17	9.08	9.08	9.17	9.35
Total	119.83	125.23	113.52	115.29	118.44	122.93

	2024	2025	2026	2027	2028	CAGR
Black	36.26	38.52	41.14	44.01	47.13	5.6%
Brown	26.81	28.84	31.20	33.81	36.67	6.9%
Gray	56.32	59.49	63.17	67.21	71.55	5.0%
White	9.63	10.02	10.47	10.95	11.44	3.4%
Total	129.01	136.87	145.98	155.98	166.79	5.4%

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 12 Canada Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Type, 2018-2028, Volume (K Tons) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Black	601	627	568	577	592	614
Brown	420	444	407	419	435	457
Gray	1,073	1,114	1,004	1,013	1,034	1,066
White	170	175	156	156	158	161
Total	2,263	2,361	2,135	2,164	2,218	2,297

	2024	2025	2026	2027	2028	CAGR
Black	643	682	726	775	828	5.3%
Brown	486	521	562	608	658	6.7%
Gray	1,112	1,172	1,241	1,317	1,399	4.7%
White	165	172	179	187	196	3.3%
Total	2,406	2,546	2,709	2,888	3,080	5.2%

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 13 Canada Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Application, 2018-2028, Revenue (USD Million) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Commercial Building	35.00	36.98	33.90	34.82	36.18	37.99
Civil Building	58.50	60.69	54.61	55.04	56.12	57.81
Others	26.33	27.56	25.02	25.43	26.13	27.13
Total	**119.83**	**125.23**	**113.52**	**115.29**	**118.44**	**122.93**

	2024	2025	2026	2027	2028	CAGR
Commercial Building	40.33	43.29	46.72	50.51	54.66	**6.7%**
Civil Building	60.21	63.39	67.09	71.13	75.47	**4.6%**
Others	28.47	30.19	32.17	34.33	36.66	**5.4%**
Total	**129.01**	**136.87**	**145.98**	**155.98**	**166.79**	**5.4%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 14 Canada Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Application, 2018-2028, Volume (K Tons) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Commercial Building	562	594	545	561	583	613
Civil Building	1,172	1,214	1,090	1,096	1,115	1,146
Others	529	553	500	507	520	539
Total	**2,263**	**2,361**	**2,135**	**2,164**	**2,218**	**2,297**

	2024	2025	2026	2027	2028	CAGR
Commercial Building	651	699	755	817	884	**6.7%**
Civil Building	1,191	1,251	1,321	1,397	1,479	**4.4%**
Others	564	596	633	674	718	**5.1%**
Total	**2,406**	**2,546**	**2,709**	**2,888**	**3,080**	**5.2%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

8.1.3 Mexico

TABLE 15 Mexico Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Type, 2018-2028, Revenue (USD Million) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Black	14.48	15.01	13.49	13.58	13.82	14.20
Brown	10.71	11.24	10.24	10.44	10.76	11.20
Gray	24.88	25.66	22.94	22.96	23.24	23.76
White	4.53	4.62	4.09	4.04	4.04	4.07
Total	**54.59**	**56.53**	**50.75**	**51.02**	**51.86**	**53.23**

	2024	2025	2026	2027	2028	CAGR
Black	14.75	15.49	16.34	17.25	18.21	**4.3%**
Brown	11.79	12.54	13.39	14.32	15.32	**5.6%**
Gray	24.55	25.63	26.88	28.22	29.63	**3.7%**
White	4.15	4.26	4.40	4.54	4.68	**2.1%**
Total	**55.24**	**57.91**	**61.01**	**64.33**	**67.84**	**4.2%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 16 Mexico Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Type, 2018-2028, Volume (K Tons) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Black	315	327	294	297	303	311
Brown	238	250	228	233	241	251
Gray	603	623	557	559	566	580
White	93	96	85	84	84	85
Total	**1,250**	**1,296**	**1,165**	**1,173**	**1,194**	**1,228**

	2024	2025	2026	2027	2028	CAGR
Black	324	341	361	382	404	**4.5%**
Brown	265	282	302	324	347	**5.9%**
Gray	600	628	660	695	731	**3.9%**
White	87	90	93	96	99	**2.4%**
Total	**1,276**	**1,341**	**1,416**	**1,496**	**1,582**	**4.4%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 17 Mexico Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Application, 2018-2028, Revenue (USD Million) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Commercial Building	15.64	16.38	14.86	15.11	15.54	16.13
Civil Building	25.90	26.63	23.73	23.67	23.88	24.33
Others	13.05	13.53	12.16	12.23	12.44	12.76
Total	**54.59**	**56.53**	**50.75**	**51.02**	**51.86**	**53.23**

	2024	2025	2026	2027	2028	CAGR
Commercial Building	16.94	17.97	19.15	20.43	21.81	**5.4%**
Civil Building	25.06	26.07	27.25	28.51	29.84	**3.4%**
Others	13.24	13.88	14.61	15.38	16.20	**4.1%**
Total	**55.24**	**57.91**	**61.01**	**64.33**	**67.84**	**4.2%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

TABLE 18 Mexico Recycled Asphalt Shingles (RAS) Market Analysis and Forecast, By Application, 2018-2028, Volume (K Tons) and CAGR (%), 2021-2028

	2018	2019	2020	2021	2022	2023
Commercial Building	304	320	292	298	308	321
Civil Building	629	647	578	577	583	595
Others	316	328	295	297	303	311
Total	**1,250**	**1,296**	**1,165**	**1,173**	**1,194**	**1,228**

	2024	2025	2026	2027	2028	CAGR
Commercial Building	339	361	387	415	445	**5.9%**
Civil Building	614	640	671	704	738	**3.6%**
Others	323	339	358	378	399	**4.3%**
Total	**1,276**	**1,341**	**1,416**	**1,496**	**1,582**	**4.4%**

Source: Press Releases, Annual Reports, SEC Filings, Investor Presentations, Expert Interviews and Fior Market Research, 2021

Chapter 9 Competitive Landscape

9.1 Share of Key Players In North America Recycled Asphalt Shingles (RAS) Market

9.1.1 North America Recycled Asphalt Shingles (RAS) Revenue (USD Million) and Market Share Analysis

TABLE 19 North America Recycled Asphalt Shingles (RAS) Revenue (USD Million) Market Analysis by Players

	2018	2019
CRH Americas Materials	184.55	192.12
Owens Corning	161.56	152.57
GAF Materials	104.58	107.94
CERTAINTEED	56.63	59.90
Cherry Companies	54.68	58.30
Malarkey	34.66	37.05
Lone Star Paving	19.42	20.89
Others	235.57	263.99
Total	**851.65**	**892.76**

TABLE 20 North America Recycled Asphalt Shingles (RAS) Revenue Market Share Analysis by Players

	2018	2019
CRH Americas Materials	21.67%	21.52%
Owens Corning	18.97%	17.09%
GAF Materials	12.28%	12.09%
CERTAINTEED	6.65%	6.71%
Cherry Companies	6.42%	6.53%
Malarkey	4.07%	4.15%
Lone Star Paving	2.28%	2.34%
Others	27.66%	29.57%
Total	**100.00%**	**100.00%**

Chapter 10 Company Profile

10.1 CERTAINTEED

10.1.1 Company Snapshot

Company Details

Valley Forge, US **Headquarters**
NA **Revenue (2020)**
1904 **Year of Establishment**
NA **Employee strength**
Mark Rayfield **Chief Executive Officer**
www.certainteed.com **Website**

Source: Fior Market Research 2021

Company Overview

A subsidiary of Saint-Gobain, one of the world's largest and oldest building products companies, CertainTeed and its affiliates have more than 6,300 employees and more than 60 manufacturing facilities throughout the United States and Canada.

Product Overview

Product List
• Recycled Asphalt Shingles (RAS)

10.1.2 Business Overview

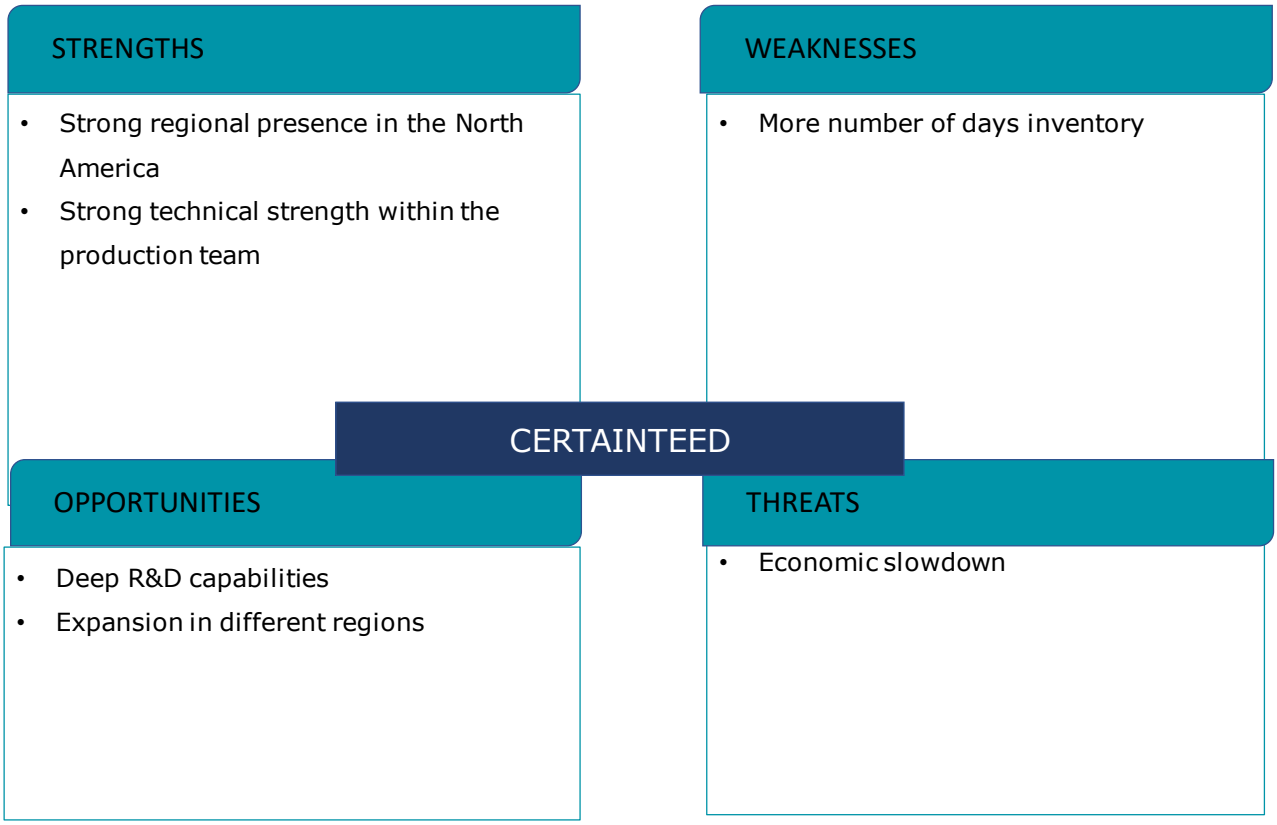
CertainTeed has helped shape the building products industry for more than 110 years. Founded in 1904 as General Roofing Manufacturing Company, CertainTeed is North America's leading brand of exterior and interior building products, including roofing, siding, fence, decking, railing, trim, insulation, gypsum and ceilings.

10.1.3 Representative Recycled Asphalt Shingles (RAS) of CERTAINTEED

Product	Information
Recycled Asphalt Shingles (RAS)	Recycled asphalt shingles are typically reused as a component in hot mix asphalt to create pavement for roadways. The shingles from one average-sized home can pave about 200 feet of a two-lane highway. Asphalt shingle scrap can be used in a variety of products, including: • Asphalt pavement, • Aggregate base and subbase • Cold patch for potholes, sidewalks, utility cuts, driveways, ramps, bridges, and parking lots, • Pothole patch, • Road and ground cover, • New roofing, and • Fuel oil

Source: Fior Market Research 2021

10.1.4 SWOT Analysis



Source: Fior Market Research 2021

10.2 GAF MATERIALS

10.2.1 Company Snapshot

Company Details

New Jersey, US **Headquarters**
NA **Revenue (2020)**
1886 **Year of Establishment**
NA **Employee strength**
James Schnepper **Chief Executive Officer**
www.gaf.com **Website**

Source: Fior Market Research 2021

Company Overview

It is the leading roofing manufacturer in North America, with plants strategically located across the U.S. As a Standard Industries company, GAF is part of the largest roofing and waterproofing business in the world.

Product Overview

Product List
• Recycled Asphalt Shingles (RAS)

10.2.2 Business Overview

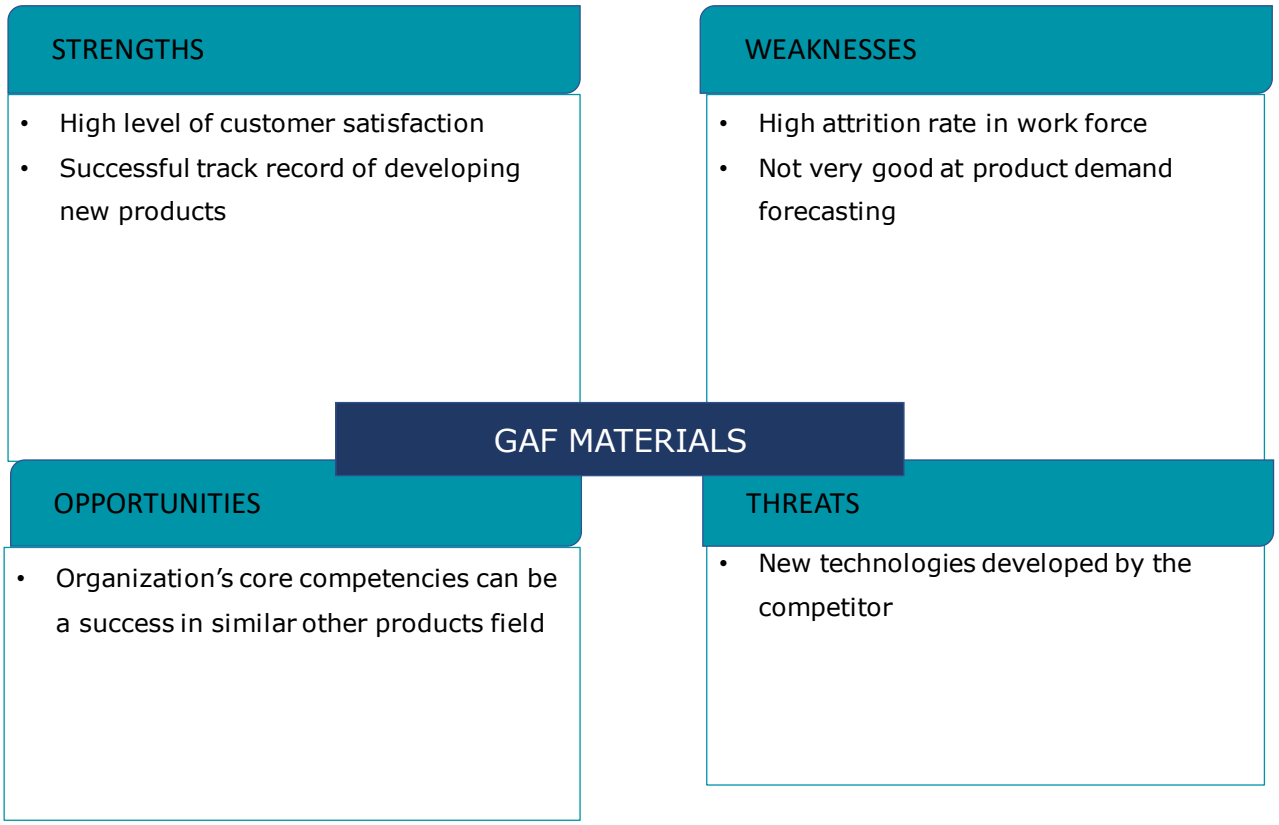
GAF has built a strong and solid product and customer franchise driven by continuous product innovation and through finding ways to better serve and connect with its customers. GAF has sustained a strong financial and operating performance over the past several years, driven from its leading capabilities, strong culture, and a business that is only partly dependent on economic cycles in the construction industry.

10.2.3 Representative Recycled Asphalt Shingles (RAS) of GAF MATERIALS

Product	Information
Recycled Asphalt Shingles (RAS)	GAF RAS process opens the door to eventually creating a circular, sustainable economy in which most of that asphalt remains in use as new shingles. By helping to establish a clean asphalt stream, the new grinding process may eventually make high quality recycled asphalt available for a number of non-shingle applications as well, such as waterproofing, automotive applications, and more. This has the potential, if successfully scaled, to create a circular economy for asphalt in general — not just in roofing.

Source: Fior Market Research 2021

10.2.4 SWOT Analysis



Source: Fior Market Research 2021

10.3 CRH AMERICAS MATERIALS

10.3.1 Company Snapshot

Company Details

Georgia, US
Headquarters

27,587
Revenue (2020)

1970
Year of Establishment

77,100
Employee strength

Dan Stover
Chief Executive Officer

www.crhamericasmaterials.com
Website

Source: Fior Market Research 2021

Company Overview

CRH's Americas Materials business combines the flexibility, speed and in-depth market knowledge of local businesses with the buying power, shared expertise and operational excellence of a global diversified network. In North America, operations are organized geographically by Division (Northeast, Great Lakes, South, West) plus Cement.

Product Overview

Product List
• Recycled Asphalt Shingles (RAS)

10.3.2 Business Overview

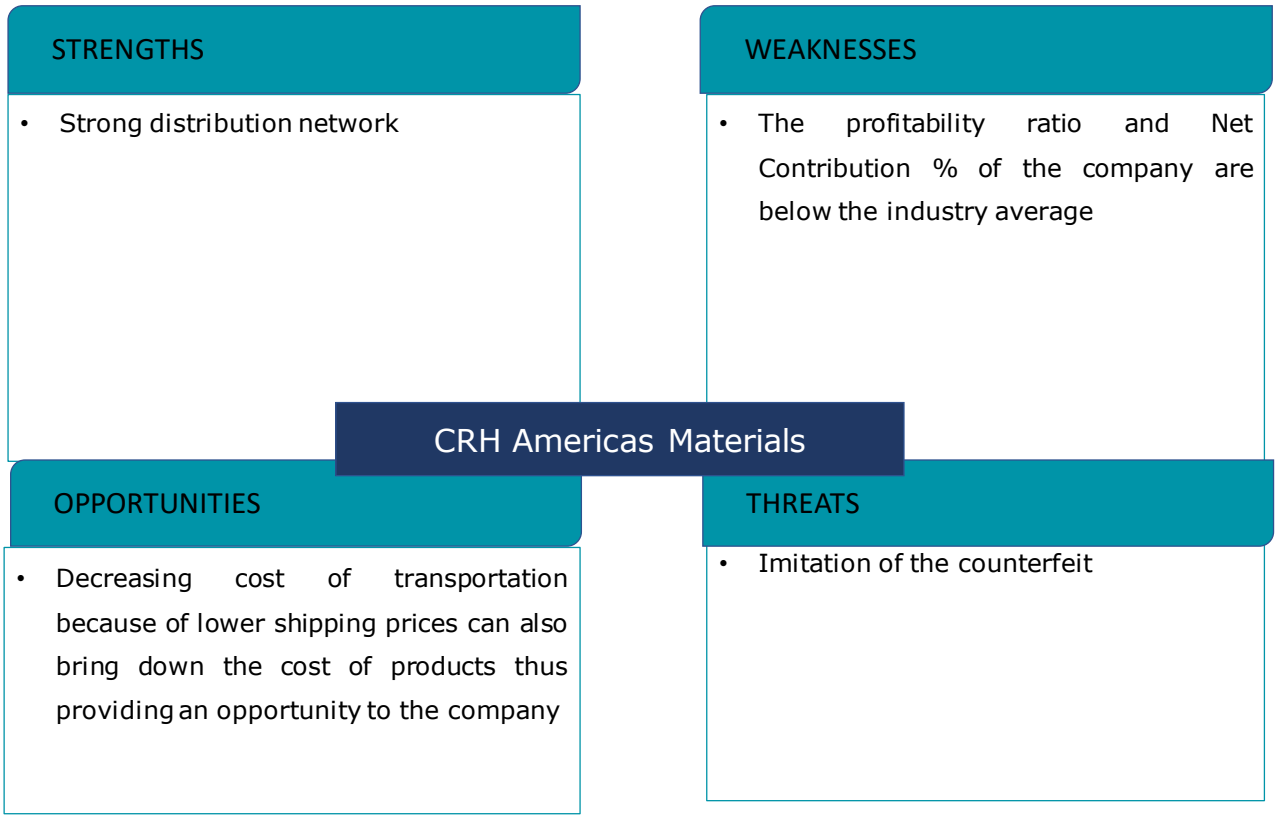
CRH is the leading building materials business in the world, employing people at operating locations in 29 countries. It is the largest building materials business in North America and in Europe. It also has positions in Asia. CRH manufactures and supplies a range of integrated building materials, products and innovative solutions which can be found throughout the built environment, from major public infrastructure projects to commercial buildings and residential structures.

10.3.3 Representative Recycled Asphalt Shingles (RAS) of CRH AMERICAS MATERIALS

Product	Information
Recycled Asphalt Shingles (RAS)	Its quality control technicians and initiatives maintain the overall safety of the site, monitor truck placement and traffic control, check grades and ensure that projects go smoothly and meet specifications. Its product innovation, which includes the latest advances in warm-mix asphalt and Recycled Asphalt Pavements (RAP) is second to none. As a full-service integrated supplier, the company control not only the production of the asphalt but also its application, guaranteeing a superior product from start to finish.

Source: Fior Market Research 2021

10.3.4 SWOT Analysis



Source: Fior Market Research 2021

10.4 OWENS CORNING

10.4.1 Company Snapshot

Company Details

Ohio, US **Headquarters**
7,055 **Revenue (2020)**
1938 **Year of Establishment**
19000 **Employee strength**
Brian Chambers **Chief Executive Officer**
www.owenscorning.com **Website**

Source: Fior Market Research 2021

Company Overview

Owens Corning is an American company that develops and produces insulation, roofing, and fiberglass composites and related materials and products. It is the world's largest manufacturer of fiberglass composites.

Product Overview

Product List
• Recycled Asphalt Shingles (RAS)

10.4.2 Business Overview

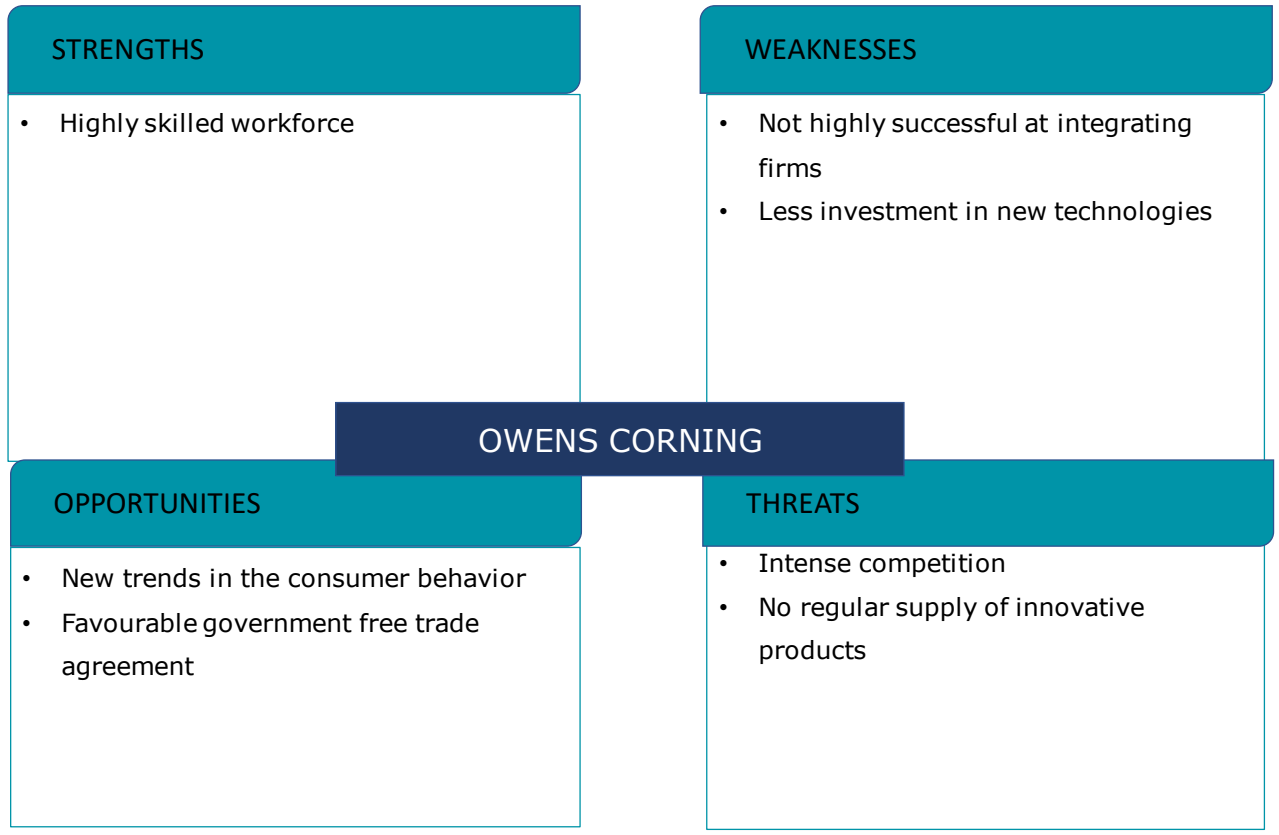
Owens Corning’s three integrated businesses are dedicated to the manufacture and advancement of a broad range of insulation, roofing and fiberglass composite materials. Leveraging the talents of 19,000 employees in 33 countries, Owens Corning provides innovative products, manufacturing technologies, and sustainable solutions that address energy efficiency, product safety, renewable energy, durable infrastructure, and labor productivity. These solutions provide a material difference to the company’s customers and make the world a better place.

10.4.3 Representative Recycled Asphalt Shingles (RAS) of OWENS CORNING

Product	Information
Recycled Asphalt Shingles (RAS)	Instead of throwing away, dumping or burying old roofing shingles, find a roofing contractor or recycling facility nearby that recycles old, torn-off roof shingles. The roofing contractor takes the torn-off shingles to a local recycling center that can recycle shingles. Look for the green recycling badge to find roofing contractors nearby that can recycle old shingles. and prepares them for use in a variety of applications. Recycled material from old roof shingles can be used in several different applications, but is most commonly mixed with asphalt and used to pave roads.

Source: Fior Market Research 2021

10.4.4 SWOT Analysis



Source: Fior Market Research 2021

10.5 CHERRY COMPANIES

10.5.1 Company Snapshot

Company Details

Texas, US **Headquarters**
NA **Revenue (2020)**
1952 **Year of Establishment**
NA **Employee strength**
NA **Chief Executive Officer**
cherrycompanies.com **Website**

Source: Fior Market Research 2021

Company Overview

Cherry is a natural and specialized aggregates company based in Houston, Texas. Cherry's materials are used in a variety of applications from parking lots and underground utilities to pipeline support and storm sewers.

Product Overview

Product List
• Recycled Asphalt Shingles (RAS)

10.5.2 Business Overview

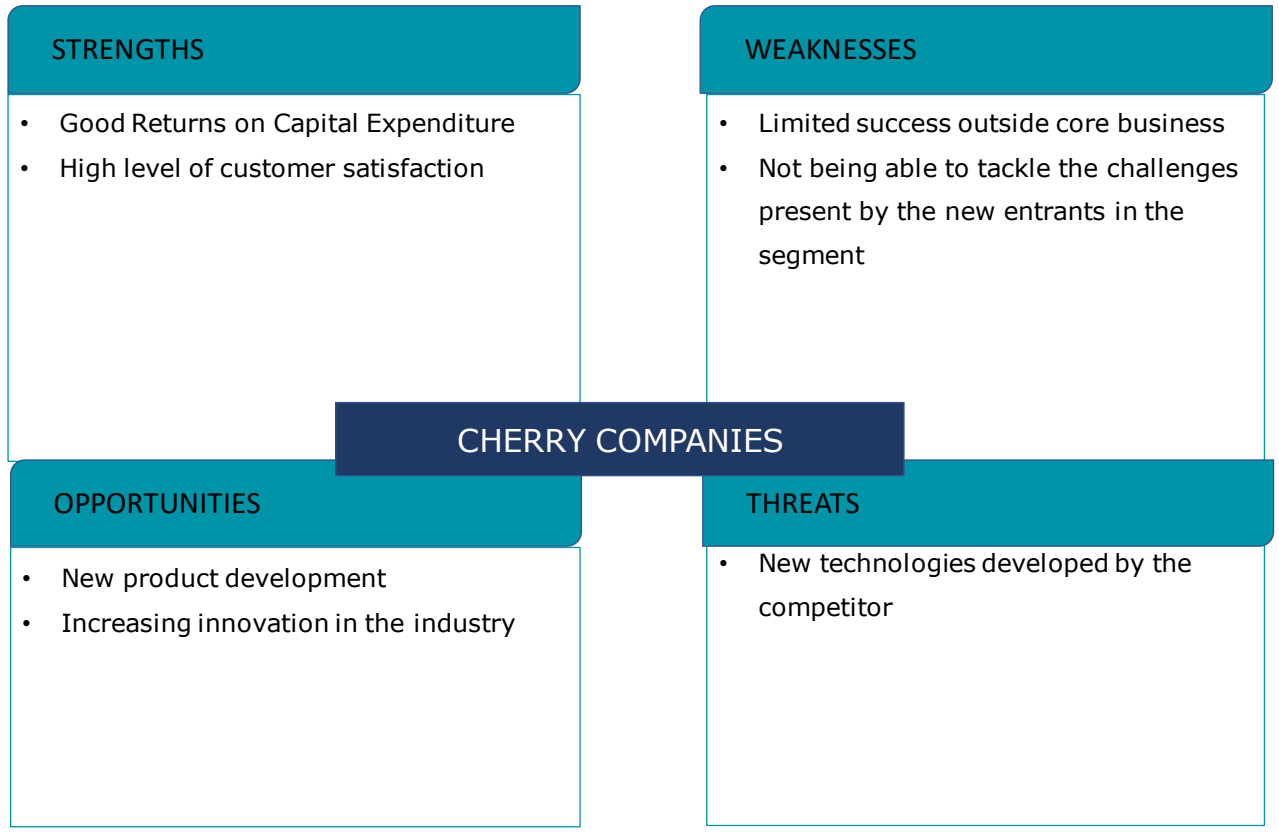
Cherry Companies is a recycling and demolition company based in Houston, Texas. With more than 65 years in business, Cherry is one of the largest recyclers in Texas and the Gulf Coast region. Recycling more than two million tons of concrete and asphalt and thousands of tons of steel every year, Cherry also recycles residential composition asphalt shingles and tires.

10.5.3 Representative Recycled Asphalt Shingles (RAS) Product of CHERRY COMPANIES

Product	Information
Recycled Asphalt Shingles (RAS)	Cherry accepts and recycles tear-off composition asphalt shingles at three of its five Houston area recycling centers. It also accepts used and manufacturer waste shingles. Recycled residential composition shingles are primarily used in hot-mix asphalt for road paving and cold patch materials. Using recycled asphalt shingles in hot-mix can actually improve the pavement's performance by increasing its resistance to wear and moisture and decreasing deformation, thermal fatigue and cracking.

Source: Fior Market Research 2021

10.5.4 SWOT Analysis



Source: Fior Market Research 2021

10.6 LONE STAR PAVING

10.6.1 Company Snapshot

Company Details
Texas, US **Headquarters**
NA **Revenue (2020)**
1997 **Year of Establishment**
NA **Employee strength**
Mike Garrett **Chief Executive Officer**
www.lonestarpavingtx.com **Website**

Source: Fior Market Research 2021

Company Overview

Lone Star Paving serves its market with two strategically located asphalt plants in Austin, Florence, New Braunfels, and Spicewood. Its capabilities include a labor force comprised of over 400 employees and thirteen large paving crews between the Austin, Temple, and San Antonio areas. Each location also runs a maintenance division responsible for parking lot repairs, sealcoat and striping projects.

Product Overview

Product List
• Recycled Asphalt Shingles (RAS)

10.6.2 Business Overview

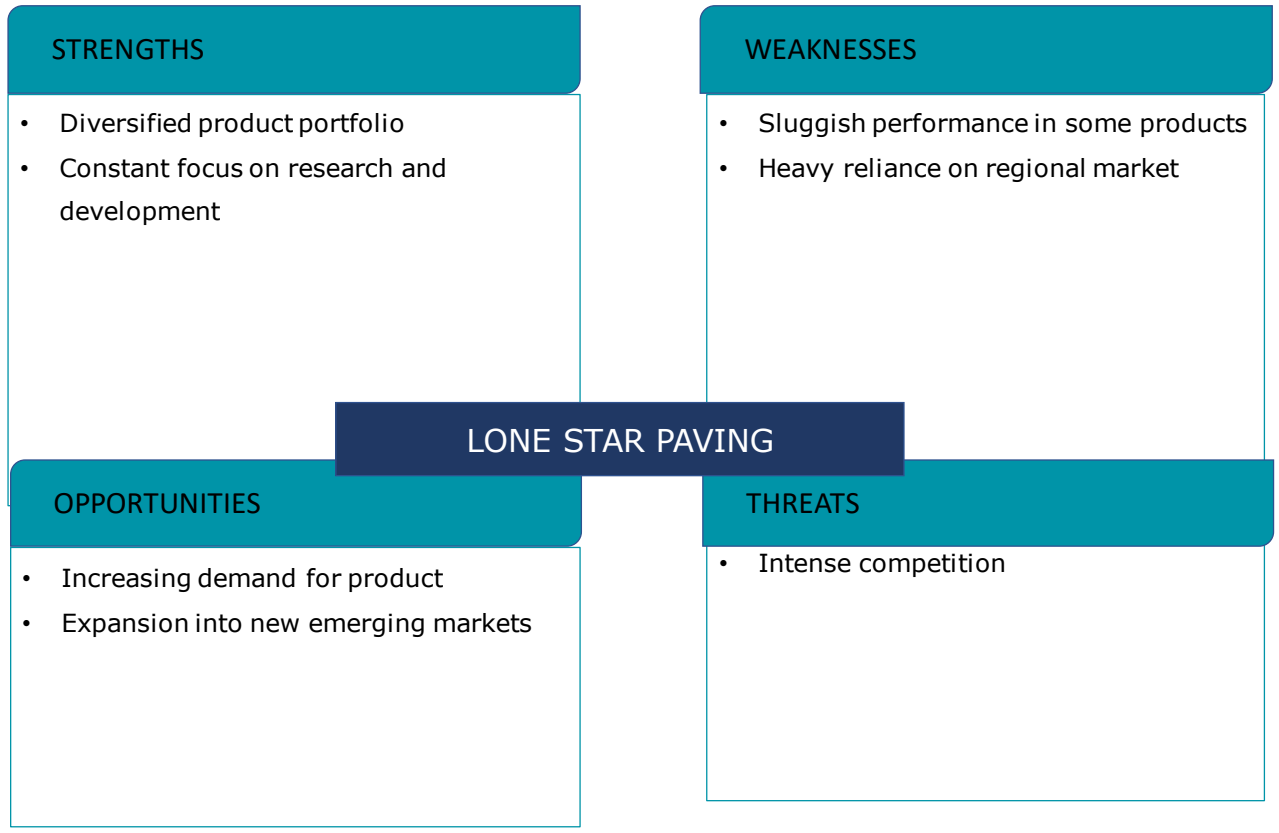
Lone Star Paving is a full-service asphalt paving company that brings together over 125 years of collective experience in the industry. It is locally owned and operated, and the company specialize in a wide range of asphalt and concrete services such as asphalt paving and repairs, parking lot repairs, sealcoating, crack sealing, concrete repairs, and striping.

10.6.3 Representative Recycled Asphalt Shingles (RAS) of LONE STAR PAVING

Product	Information
Recycled Asphalt Shingles (RAS)	Asphalt is first removed from a paved surface by either tearing it up or grinding the surface down. Any remaining debris is crushed up to ensure that the mix will be even when heated. Heating the asphalt debris up will melt the bitumen allowing the mixture to be reusable. When the recycled asphalt heats to a certain level, it can apply to new paving materials. This will ensure the quality is as high as its regular counterpart. For asphalt that does not make it into new paving projects, there are still many other uses for it. One of the many industries using old asphalt materials is roofing manufacturers. Roof shingles are made out of the asphalt bitumen, tar, and aggregate that is collected from old paving projects.

Source: Fior Market Research 2021

10.6.4 SWOT Analysis



Source: Fior Market Research 2021

10.7 MALARKEY

10.7.1 Company Snapshot

Company Details

Oregon, US **Headquarters**
NA **Revenue (2020)**
1956 **Year of Establishment**
NA **Employee strength**
Gregory Malarkey **Chief Executive Officer**
www.malarkeyroofing.com **Website**

Source: Fior Market Research 2021

Company Overview

Founded in 1956, Malarkey Roofing Products is a family-owned, US manufacturer of residential and commercial roofing products, with production facilities in Oregon, California, and Oklahoma.

Product Overview

Product List
• Recycled Asphalt Shingles (RAS)

10.7.2 Business Overview

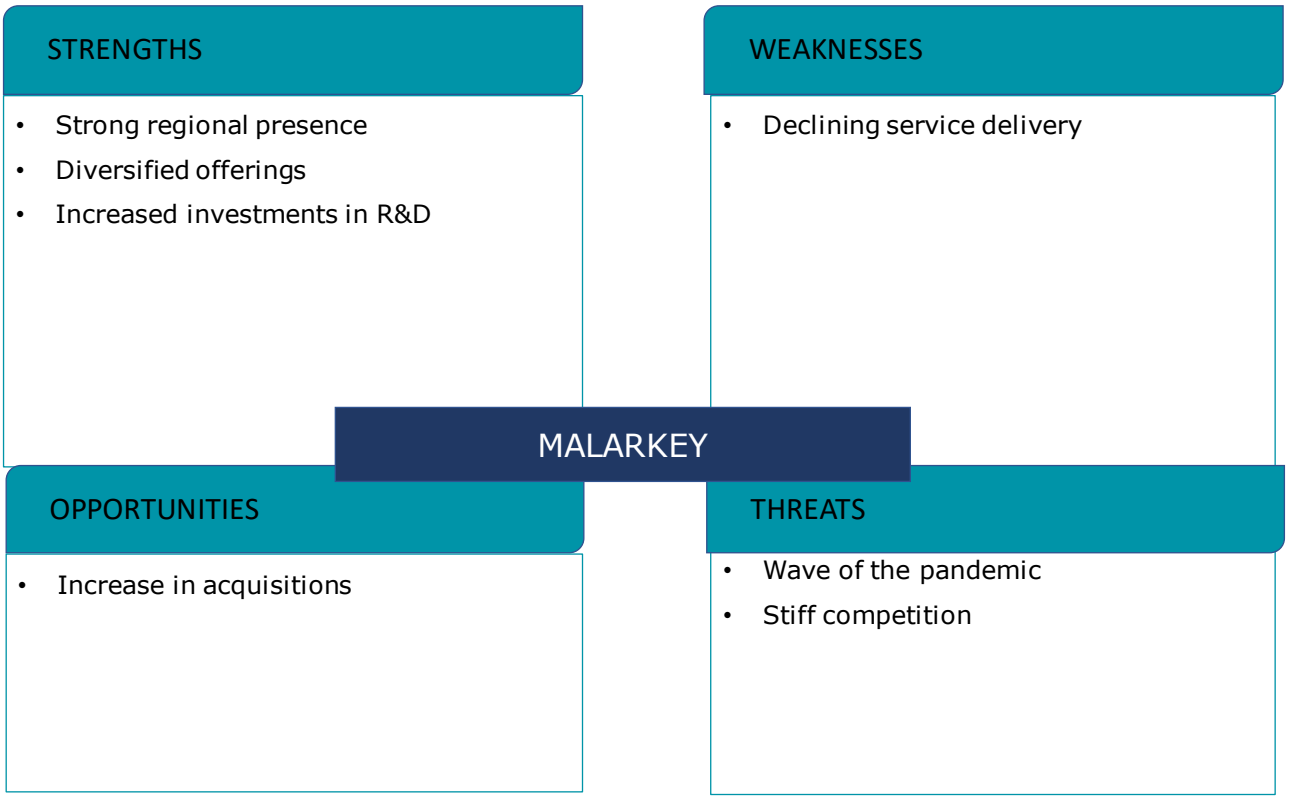
Malarkey Roofing Products is a Portland, Oregon based roofing manufacturer that provides performance-driven residential, commercial, and sustainable roofing solutions with unparalleled service and integrity. Since 1956, Malarkey Roofing Products has consistently valued innovation and is motivated to provide products that are committed to sustainability through long-term solutions, creating value for customers and business partners.

10.7.3 Representative Recycled Asphalt Shingles (RAS) of MALARKEY

Product	Information
Recycled Asphalt Shingles (RAS)	Standard shingles are made of hard, dried-out asphalt. They're brittle, and under stress, prematurely age and crack. It's why the company pioneered rubberized asphalt in shingles. Combining high-grade asphalt with virgin rubber polymers (SBS), as well as recycled rubber and plastic polymers, its proprietary NEX Polymer Modified (Rubberized) Asphalt technology chemically rubberizes the asphalt core of the shingle for superior all-weather resilience, longer product life, and reduced environmental impact, while smog-reducing granules help clean the air of emission pollutants. Malarkey shingle are made better to last longer, and more sustainable.

Source: Fior Market Research 2021

10.7.4 SWOT Analysis



Source: Fior Market Research 2021

Chapter 11 Conclusion

The North America recycled asphalt shingles (RAS) market is valued at USD 811.80 million in 2020 to USD 1,227.45 million by 2028 growing at a CAGR of 5.8% from 2021 to 2028. Demand from construction sector is one of the factors driving the market. Asphalt shingles are broadly used as roofing covers. In the US, around 11 million tons of asphalt roofing shingle scrap is produced every year. These asphalt shingle scraps are known as Recycled Asphalt Shingles (RAS). The Recycled shingles are the manufacturer's scrap or the recovered material from the old roofs. These shingle scraps, after proper processing, are used as a modifier in the Hot Mix Asphalt (MHA) and Warm Mix Asphalt (WMA). Asphalt Shingles could be both organic felt and fiberglass type.

The study delivers a comprehensive analysis of type and application and countries. The type segment is divided into black, brown, gray, and white. The gray segment accounted for the largest market share of 45.27% in the year 2020. The application segment includes commercial building, civil building, and others. The civil building segment accounted for the largest market share of 47.73% in the year 2020. The country segment is classified into U.S., Canada and Mexico. U.S. accounted for a significant market share of 79.77% in the year 2020.

Key players in the North America recycled asphalt shingles (RAS) market are CRH Americas Materials, Owens Corning, GAF Materials, CERTAINTEED, Cherry Companies, Malarkey and Lone Star Paving among others.

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