



# Mineral Products Association Sustainable Development Report 2020/2021

Data and developments

# HIGHLIGHTS

Following the launch of the MPA Charter in 2017, this Sustainable Development Report is structured to align with the 7 MPA Strategic Priorities to enable the Vision for 2025 to be achieved whereby mineral products are 'valued as an essential and economically, socially and environmentally sustainable industry of significance to the economy and our way of life'.

The Report is based on data from 2020 where available, but also includes any developments in 2021 for completeness.



- MPA continues to drive towards Vision Zero.
- The proportion of Lost Time Incident's relating to 'The Fatal 6' has fallen over the last year to around 30%.
- MPA and British Precast merge and join forces launching a new Health & Safety Awards scheme.



- The Good Neighbour Scheme continues to grow.
- BMAPA establish a new regional liaison network for marine aggregate operators.



- Recycled and secondary aggregates accounted for 28% of total aggregates supply.
- MPA engaged and influenced the global sand debate.
- MPA data and report shows continuing low aggregate reserves replenishment.



- MPA's innovation programme illustrates how the industry is delivering on the UK concrete and cement Roadmap to Beyond Net Zero.
- A UK cement kiln operated a world first net zero fuel trial involving large scale hydrogen and bio-based fuels.



- 8,549ha of priority habitat created to date with a further 11,000ha planned.
- MPA Members planted over 110,000 trees and 7km of hedgerows.
- MPA showcases 50 years of successful contribution to nature delivery.



- 90% of surveyed quarries operate under BS EN ISO 9001.
- 100% of surveyed production certified to 'very good' or 'excellent' under BES6001.



- The industry contributes £16bn in turnover to UK economy.
- Productivity rates are 20% higher than the national average.

# INTRODUCTION

The Mineral Products Association (MPA) is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar, silica sand and other industrial mineral industries. With the merger of British Precast to become MPA Precast, and affiliation with the British Association of Reinforcement (BAR), Eurobitume, MPA Northern Ireland, MPA Scotland and the British Calcium Carbonate Federation, it has a growing membership of over 520 companies and is the sectoral voice for mineral products. MPA membership is made up of the vast majority of independent SME companies throughout the UK, as well as the 9 major international and global companies. It covers 100% of cement and lime production, 90% of aggregates production, 95% of asphalt and over 70% of ready-mixed and precast concrete production.

A combination of supply chain bottlenecks, shortages and soaring energy prices have challenged many industries and slowed momentum. These challenges are expected to continue during 2022, holding back growth and raising prices. Overall, the Bank of England expects GDP growth of 5% in 2022 and 1.6% in 2023.

The construction supply chain has been at the forefront of bottlenecks and rising costs. Rising prices of construction materials including steel, concrete, timber and glass, along with the difficulty in sourcing these, has somewhat impacted delivery of projects on the ground in the

second half of last year. Construction output is nonetheless on track for 14% growth in 2021 compared with 2020, and whilst the supply environment remains a challenge, the demand pipeline is robust. Overall expect further growth by 4.8% in 2022 and 2.3% in 2023, with infrastructure work set to be the key driver of growth in year ahead, underpinned by work progressing under the five-year spending plans within the regulated sectors and momentum building up on major projects, particularly on HS2.

As a result of the sharp rebound in construction activity, mineral products markets saw high levels of demand throughout 2021. Sales volumes are on track for double-digit growth on an annual basis in 2021 (12% for primary aggregates, 11% for asphalt and ready-mixed concrete and 18% for mortar) despite producers facing major challenges in terms of haulage capacity and rising costs of energy, raw material availability, labour and carbon. On the basis of the outlook for construction the MPA expects demand for mineral products to remain relatively robust through 2022 and 2023. This positive outlook is conditional on the timely delivery of the infrastructure pipeline, for which delivery remains a significant source of uncertainty amongst producers of mineral products, particularly given Government's poor record in this area in recent years.

## Health and Safety



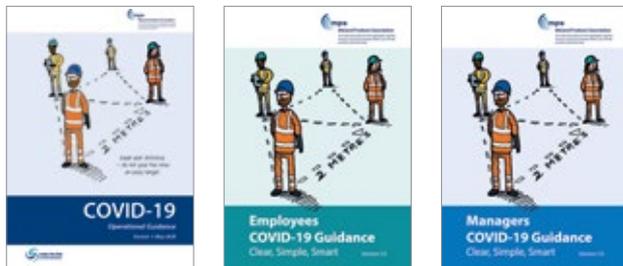
### OBJECTIVE: EMPLOYEE AND CONTRACTOR HEALTH AND SAFETY

**Treat the health and safety and well-being of employees, contractors and visitors as the number one priority in order to achieve Zero Harm.**

In 2021 a combined MPA and British Precast Health & Safety Awards took place, attracting 136 topic entries. The focus as always was on innovation and transferability and these will be shared via the 'MPA Sharing Good Practice Guide'.



Further resources to support the 'Vision Zero' – 'Safe & Well Everyday' strategy were launched, including an Employee Guide, pocket card and three PowerPoint presentations. Alongside, the leading indicators and targets were incorporated in a new health and safety statistics pack and a Quarterly Bulletin circulated to member companies.



Central to the Vision is the elimination of the causes of the 'The Fatal 6' - the high consequence hazards that are responsible for the majority of fatalities and serious incidents within the industry. 'The Fatal 6' are:

- Contact with moving machinery and isolation
- Workplace transport and pedestrian interface
- Work at height
- Workplace Respirable Crystalline Silica (RCS)
- Struck by moving or falling object
- Road traffic accidents

MPA's Health and Safety Committee and Working Groups, in collaboration with Members and other key stakeholders, continued to develop and communicate COVID-19 advice and guidance. This has supported Members, the industry and other industries in the UK and internationally, adapt to COVID-19 secure working and enable businesses to benefit from their role as an 'essential' sector.

### TARGET

**The MPA targets zero harm to all employees, contractors, visitors and members of the public.**

In 2020, there were no fatalities amongst employees, contractors or third parties on Member sites.

#### Hard Target 1

**Zero Reportable Incidents (fatalities or serious injuries) relating to 'The Fatal 6' by 2025.**

The data to Q3/2021 continues to show improvement and the proportion of LTI's relating to 'The Fatal 6' has fallen over the last year to around 30%.

#### Hard Target 2

**A 50% reduction in Lost Time Injury Frequency Rate (LTIFR) to 1.5 or less by 2025.**

The LTIFR has increased during 2021 and now stands at 3.71 (rolling 12 months to Q3/2021). The variation in performance across activities remains significant and targeted efforts will be focused on improving performance.

#### Hard Target 3

**Zero incidences of uncontrolled personal exposures to RCS above the Workplace Exposure Limit (WEL).**

The latest data shows a total of eight instances in 2021 where respirable crystalline silica exposure has exceeded the Workplace Exposure Limit (WEL) and the hierarchy of control has not been fully applied. This is an improvement on 2020 although it is acknowledged that some exposure monitoring programmes may have been disrupted in 2020 due to COVID-19 restrictions. Mitigating action is being taken to comply with the WEL.

#### Hard Target 4

**Total Recordable Injury Frequency Rate**

Total Recordable Injury data is now being collected with the intention of establishing a hard target.

### OBJECTIVE: PUBLIC SAFETY

**To protect the general public around active operations, on disused sites and in the transportation and use of our products.**

The MPA worked collaboratively to promote 'Stay Safe' and drowning prevention, joining over 50 organisations coming together for the first time to issue coordinated water safety advice as part of the National Water Safety Forums #RespectTheWater campaign. MPA Member communications were issued to raise awareness of expected public water safety issues over holiday periods, made more important due to COVID-19 staycations. Schools and MPs in high-risk areas were kept apprised of the dangers via the online water safety resources and support.

On Vulnerable Road User Safety (VRU), MPA continued to raise e-scooters as a safety concern. MPA also continued to be an active member of the Construction Logistics Community Safety (CLOCS) standard by promoting its use across the mineral products industry.

# People



**27,996** MPA Membership  
- direct employees in England and Wales



**453,709** Employee training hours



**6,819** Voluntary hours worked by staff during normal working hours



**136** Sites undertaking community liaison activities



**23,014** Visitors to MPA sites

## OBJECTIVE: LOCAL COMMUNITIES

Engage fully with local communities and strive to be good neighbours.

The industry is committed to operating at the highest standards to minimise or eliminate the likelihood of impacts on communities living close to sites.

In 2019 MPA launched a pilot of the MPA Good Neighbour Scheme. This provides Members with a Community Engagement Plan template, a suite of banners and signs to install in and around sites to demonstrate their support for the scheme, posters for internal use and a "How are We Doing?" Community Response checklist to assess how the local community perceives the site has performed in a particular year. Take up to date has been limited by the pandemic restrictions, and further progress will be reported on next year.

Data provided across the 888 sites that reported indicated 150 complaints were recorded in 2020 at asphalt, ready mix concrete and aggregate sites. Out of the 888 sites, 10% received one or more complaints from a member of the public. 31% of complaints related to dust, 23% to noise and 13% to transport. Chart 1 provides a further breakdown of site complaints according to site type.

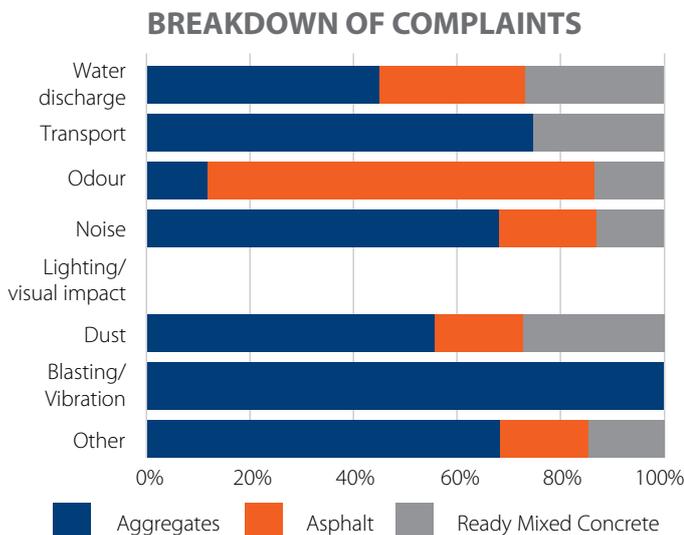


Chart 1 showing categorised recorded complaints for aggregates, asphalt and ready mixed concrete sites.

## OBJECTIVE: EQUALITY AND DIVERSITY

Encourage opportunities in the industry for all, attracting and retaining the best talent.

In 2020, 27,996 people were directly employed by MPA Members in England and Wales, of which, 87% were male and 13% female. This represents a similar demographic to last year. MPA is planning a series of events with young leaders to evaluate how to accelerate change within the industry and attract new interest in it as a career.

### DEMOGRAPHICS OF WORKFORCE



Chart 2 showing the demographic of the mineral products industry workforce.

# Resource Use

## OBJECTIVE: WATER

Optimise the use of water and ensure prudent management.

### TARGET

**100% of sites to be measured for water consumption and discharges by 2025.**

MPA Members strive to minimise water use wherever possible prioritising water from sustainable sources and reusing water in mineral washing plants. Recent changes to regulations around quarry dewatering have meant that previously exempt water transfer and abstraction activities on sites must be licensed by the regulator. The regulator has three years, from January 1st 2020, to determine licences for these historic water transfer and abstraction activities. Once sites are licensed MPA will review data collection on sustainable water use.

**OBJECTIVE: ACCESS TO SUFFICIENT MINERALS AND RESOURCES**

**Plan, consult and engage with communities, planning authorities and regulators when seeking new permissions to ensure steady and adequate supply.**

The [9th Annual Mineral Planning Survey \(AMPS21\)](#) was published, indicating that in 2020 demand for land-won sand & gravel and crushed rock significantly outstripped the new reserves being permitted. The 10-year average replenishment rates for crushed rock and sand & gravel reserves were 76% and 63% respectively. MPA's contribution to the MHCLG (Ministry of Housing, Communities and Local Government) [Aggregate Mineral 2019 Survey \(AM 2019\)](#) resulted in shortfalls in previous reports being acknowledged which mis-represented historical replenishment rates for aggregates in England and Wales.

Following MPA representations, the Housing, Communities and Local Government Select Committee report into the future of the planning system in England, made it clear that housing cannot be treated in isolation from other forms of development such as mineral extraction. In addition, the latest Government review of the National Planning Policy Framework reinforced the importance of mineral consultation areas, recognised coal derived fly ash as a mineral resource of local and national importance and clarified the contribution of building stone. Evidence that suggests the domestic supply of aggregates is relatively resource efficient include:

- Land area in England subject to all mineral extraction = 0.1%<sup>1</sup>
- UK marine area subject to marine aggregates extraction = 0.01%
- Share of GB aggregates market supplied from recycled sources = 28%
- MPA biodiversity surveys have identified 8,549 hectares of former quarries restored to priority habitats with a further 11,000 hectares of priority habitat planned

<sup>1</sup> Figure 1a, *Land Use in England, 2018*, MHCLG, *Official Statistics Release*, 16th July 2020

**OBJECTIVE: WASTE**

**Minimise waste and maximise re-use and recycling.**

On waste and production re-use, MPA Members reported:

- 13,221 tonnes of waste was sent to landfill
- Over 5 million tonnes of waste was used beneficially in site restoration and engineering

Aggregates can be obtained from the recycling of Construction, Demolition and Excavation Wastes (CDEW), or derived from other industrial, production or extractive processes, referred to as secondary aggregates. Secondary aggregates can include china clay and ball clay waste as well as furnace ash and slag from iron and steel production. In 2020, MPA updated "[The contribution of Recycled and Secondary Materials to Total Aggregates Supply in Great Britain](#)" publication. The latest estimates show that recycled and secondary aggregates accounted for 28% of total aggregates supply, which maintains Great Britain's leading position internationally, well ahead of the European average.

**Climate Change and Energy****OBJECTIVE: ENERGY**

**Optimise the use of energy whilst maximising the use of non-fossil fuels.**

MPA Member data indicated that CO<sub>2</sub> emissions per tonne of hard rock and sand & gravel production remained similar to 2019. The preparation of briefings for Members on Net Zero for aggregate production is underway to assist in driving emissions down further.

The launch of UK Concrete in 2019 and the 2020 publication of the '[UK concrete and cement industry roadmap to beyond net zero](#)', was followed in 2021 with the publication of more detailed technology papers on fuel switching and carbon capture and use/storage (CCUS). In particular the timely launch of '[Decarbonising UK Concrete and Cement: Accelerating the net zero journey](#)', prior to COP 26 provided policy recommendations for UK Government.

The cement sector continues to invest in emissions reductions through fuel switching to waste, waste biomass and waste part-biomass fuels. In 2020, waste derived fuels made up 47% of the thermal input with waste biomass fuels comprising 18% of the thermal input to the cement manufacturing process. Alternative fuels also made up 29% of the thermal input for dolomitic lime manufacturing in 2020.

In 2019, MPA Cement and the British Lime Association (BLA) initiated fuel switching innovation projects, via BEIS funding, with a value of £6.2 million which would demonstrate fuel switching cement and lime kilns to low and zero carbon fuels. In 2021, this resulted in a UK cement kiln successfully operated using net zero fuel on the kiln main burner. It was part of a world first demonstration using hydrogen technology.

As expected, CO<sub>2</sub> emissions from dolomitic and high calcium lime remain broadly similar to previous years as there are limited options to decarbonise the sector further without the widespread availability of technologies such as low carbon fuels or carbon capture.

**OBJECTIVE: TRANSPORT**

**Reduce the climate change and other impacts of the transportation and delivery of products.**

**TARGET**

**To understand and obtain a baseline for the amount of CO<sub>2</sub> produced per tonne of product during transportation by 2020.**

Product type	Average distance by road one way in miles	Average load tonnes by road	Share of sales transported by road %
Aggregates	28	22	87
Ready-mixed concrete	10	14.5	100
Asphalt	31	16	100

Table 1 showing road transport information for individual product groups.

In 2019 MPA and the Rail Freight Group published '[Cutting Carbon and Congestion: Rail Freight and Mineral Products working together to build Britain.](#)' Over a five year period (2013-2018) mineral products rail freight has increased by 21% and it is now the largest user of the rail freight network in terms of tonnes carried. This ensures that construction demands are met while carbon emissions and road congestion are reduced.

## Natural Environment



### OBJECTIVE: BIODIVERSITY

**Protect and enhance biodiversity and deliver net gain wherever possible.**

### TARGET

**100% of extractive sites to have Biodiversity Action Plan in place by 2025.**

57% of extractive sites reported that they had a Biodiversity Action Plan in place. MPA has developed a guide for Members on how to prepare and implement a Biodiversity Action Plan at an operational site to encourage further uptake.

The restoration of mineral workings is essential, and Members strive to deliver priority habitats for nature conservation, where possible. To date MPA Members have recorded the creation of at least 8,549ha of priority habitat and have at least a further 11,000ha planned. This data understates the industry's full contribution to biodiversity as the survey information is incomplete.

MPA marked the 50th anniversary of the restoration awards with MPA's '[Quarries & Nature... a 50 year success story](#)', a [celebratory film](#) and accompanying [brochure](#). The scale and diversity of restoration was highlighted, alongside the biodiversity and conservation work undertaken by Members over the years. Leading figures in nature conservation, including Natural England, RSPB and The Wildlife Trusts, provided strong endorsements of the role that mineral extraction and restoration can play in nature recovery. MPA is also engaging with Defra and Natural England to ensure mandatory biodiversity net gain introduced by the Environment Act 2021 is applied proportionately and sensibly to minerals developments.

## A 50 year success story Quarries & Nature



### OBJECTIVE: ENVIRONMENTAL PROTECTION

**Minimise and mitigate operational impacts.**

### TARGET

**100% of sites to have an Environmental Management System in place by 2025.**

The number of reported sites with an Environmental Management System remained constant, with 99% of sites reporting in 2020 confirming that they had one in place.

## Built Environment



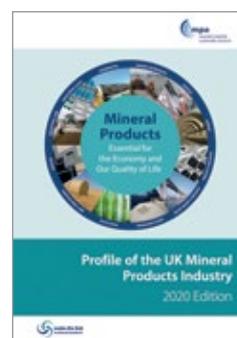
### OBJECTIVE: SUSTAINABLE PRODUCTS

**Promote the development and use of sustainable and responsibly sourced mineral products.**

90% of quarries that reported against the objective confirmed that they operated under the British Standard EN ISO 9001 Quality Management System. Other Member sites reported similar results with 70% of ready mixed concrete, 99% of asphalt and 100% of wharves also covered by the Standard.

Members also reported that for aggregates 100% of reported production was certified as 'very good' or 'excellent' under the Responsible Sourcing Standard BE56001. Similarly for ready mixed concrete Members reported that 100% of reported production was certified to 'very good or 'excellent'.

## Communicating Industry Value



The Mineral Products industry supplies the raw and manufactured materials for building our homes, as well as vital new and upgraded infrastructure to support future economic growth and our quality of life.

With around 400 million tonnes of aggregates, asphalt, cement, concrete and other mineral products supplied in Great Britain in 2018, the industry produces over 4 times the total volume of all energy minerals combined.

It also contributed £16bn in turnover to the UK economy in 2018, with over 2,000 active sites and plants, and supported an additional 3.5 million jobs throughout the supply chain. The UK Mineral Products industry is highly productive: each worker produced about £71,000 in 2018, 20% higher than the national average.

	Units	2017	2018	2019	2020
Aggregates production (primary)	GB mt	176.3	179.9	177.2	158.6
Marine dredged aggregates landings for construction use	GB mt	14.3	13.7	13.4	12.1
Recycled/ secondary materials	GB mt	71.9	72.0	72.3	62.2
Asphalt sales	GB mt	22.7	22.9	22.7	20.7
Ready-mixed concrete sales	GB mm <sup>3</sup>	17.4	17.1	16.4	13.4
Cement- domestic sales (2015- UK onwards)	GB mt	10.2	10.1	9.9	8.6
Cementitious materials (2015- UK onwards)	GB mt	15.0	15.2	15.2	13.0
High calcium and dolomitic lime	GB mt	1.1	1.2	1.2	1.1
<b>Health and Safety</b>					
Lost Time Incident Frequency Rate (LTIs per million employees - all MPA activities)		3.6	3.4	3.22	3.3
<b>People</b>					
Employment- direct by MPA Members (excl cement, precast)		25,442	26,085	26,311	25,878
Employment- direct by MPA Members (cement)		2,210	2,250	2,118	2,118
Recorded visitors to aggregates sites, cement kiln sites		36,257	26,447	30,978	23,014
Number of community liaison group meetings (aggregates)		297	188	86	54
Number of community liaison group meetings (cement)		25	25	27	12
Number of recorded complaints (aggregates) <sup>2</sup>		258	193	129	107
<b>Resource use</b>					
Waste and by products recovered as raw materials and fuels by cement industry	mt	1.5	1.4	1.3	1.2
<b>Climate Change and Energy</b>					
CO <sub>2</sub> emissions from lime production	kg/tonne	1,000.7	993.9	1,017.1	1,007.8
CO <sub>2</sub> emissions directly from cement production	kg/tonne	692.7	697.1	702.4	701.0
CO <sub>2</sub> emissions from asphalt production	kg/tonne	24.1	25.2	22.0	23.5
CO <sub>2</sub> emissions from marine aggregates landed	kg/tonne	7.0	7.2	7.0	7.7
CO <sub>2</sub> emissions from crushed rock production	kg/tonne	3.6	2.8	3.3	3.0
CO <sub>2</sub> emissions from sand & gravel- land won production	kg/tonne	3.1	2.7	2.3	2.7
CO <sub>2</sub> emissions from ready-mixed concrete production	kg/tonne	0.7	0.7	0.6	0.6
Average road delivery distance (aggregates)	miles	26.7	28.0	23.0	28.0
Average road load (aggregates)	tonnes	20.3	21.0	20.0	22.0
Share of sales moved by rail (aggregates)	%	11	11	11	11
<b>Natural Environment</b>					
Aggregate sites with certified EMS	%	97	97	99	92
Cement and lime sites with certified EMS	%	100	100	100	100
Priority Habitats created to date by MPA Members	Ha	8,192	8,327	8,300	8,549
Priority Habitats planned by MPA Members	Ha	11,458	10,770	11,000	11,000
Archaeology- land investigated pre-planning permission	Ha	453.1	256.0	64.7	59.4
Archaeology- land investigated post-planning permission	Ha	379.6	171.0	102.3	115.3
Area of seabed dredged	km <sup>2</sup>	90.9	97.9	105.1	101.0
Trees planted	Ha	111,370	503,488	58,839	112,869
Hedgerows planted	km	13.2	7.6	10.5	7.4
Dry Stone Walling - Kilometres built	km	5.4	1.0	2.0	1.5

<sup>2</sup> Data prior to 2019 included aggregates, asphalt and ready mixed concrete sites

# Mineral products in construction

## QUARRYING, MINING & PRODUCTION 2,400 UK sites

- Aggregates
- Cement
- Concrete
- Mortar
- Asphalt
- Dimension Stone
- Silica Sand
- Industrial Clay & Lime



### QUARRY RESTORATION

- Biodiversity Net Gain
- Nature Reserves
- Country Parks
- Agriculture



### RECOVERY, REUSE & RECYCLING

- Construction waste
- Excavation waste
- Commercial waste
- Industrial by-products



**81,000 jobs**



**400 million tonnes**  
produced in UK  
each year



**£5.8 billion**  
contribution to  
UK economy



## Mineral products in manufacturing



Water



Food



Fertiliser



Medicine



Steel



Glass



Ceramics



Paper

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This report contains data collected from year 2020 which is collated by MPA in 2021 for publication end of 2021/ early 2022.

The Mineral Products Association is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

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essential materials  
sustainable solutions



Mineral Products: essential for schools... hospitals... homes... roads... railways  
... energy supply... airports... ports... food... water... agriculture