We all have a role to play…

…Thank you for your part in

MAKING THE WORLD A BETTER HOME

GROW & IMPACT

SAINT-GOBAIN ABRASIVE

SAINT-GOBAIN

AGENDA

- Introduction and frame of reference
  - Saint-Gobain
  - Abrasives
    - Vision
    - Targets & Metrics
- Key to technical success
  - Knowledge and execution cycles
    - Case Study
      - Current manufacturing flow
      - Identification of interjection points
      - Technical gaps

OUR CSR ROADMAP: TOWARDS A POSITIVE CONTRIBUTION

Build a decarbonized world

Climate Change

Introduce circularity to our markets

Circular Economy

Be a forerunner of the most demanding standards

Health and Safety throughout the entire value chain

Foster an open and engaging work environment

Employee Engagement and Diversity

Reinforce our local ecosystems

Inclusive Growth

Act without compromise

Business Ethics

Recognized commitments

CDP DISCLOSURE INSIGHT ACTION A LIST 2022 CLIMATE

Bloomberg Gender-Equality Index 2023

5th year running

top EMPLOYER GLOBAL 2023 CERTIFIED EXCELLENCE IN EMPLOYEE CONDITIONS

Global: 8th year running

CONCRETE ACTIONS TO MAXIMIZE OUR CONTRIBUTION AND MINIMIZE OUR FOOTPRINT

Our solutions provide performance and sustainability

New modes of sustainable construction including lightweight construction
Decarbonization of our customers' industrial processes

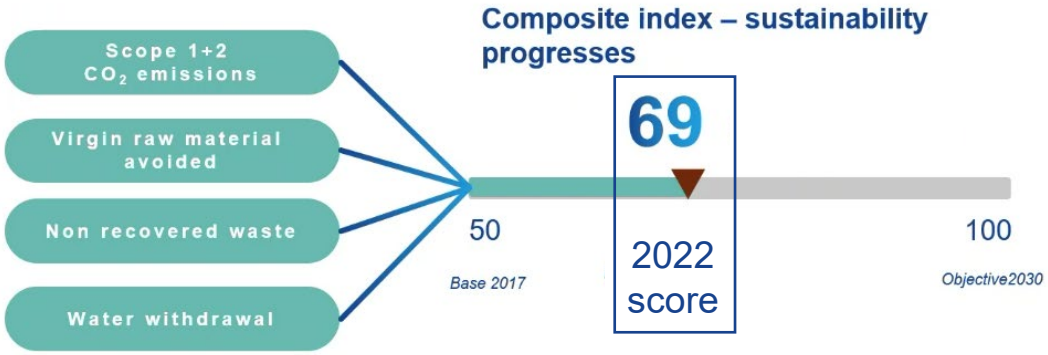
1) Internal methodology developed in partnership with EY Sustainable Performance & Transformation: avoided emissions calculated as the difference between the greenhouse gas emissions associated with the product's Life Cycle Assessment and the gains made by the product compared to a basic reference solution, multiplied by its lifespan (e.g. 30 years for insulation, 50 years for glass). Solution and reference scenario defined for each product in the portfolio.

Towards
75% of sales
from sustainable solutions in 2025
(73,9% in 2022)

Nearly 1.3 billion
tons of CO_2 avoided during their lifetime(1)

2050 NET ZERO CARBON

Technologies to decarbonize our processes



€100M per year
(Capex and R&D costs)
for 10 years

ON TRACK TO ACHIEVE OUR TARGETS

	CLIMATE CHANGE	CIRCULAR ECONOMY	HEALTH AND SAFETY	ENGAGEMENT AND DIVERSITY	INCLUSIVE GROWTH	BUSINESS ETHICS
	2030	2030	2030	Annual	2025	Annual
	-33% CO_2 emissions scope 1+2 vs 2017	**80%** non-recycled waste vs 2017	TF2[1] less than or equal to **1.5**	**Employee engagement rate** higher than benchmark	**100%** countries with community assistance programs	**100%** new managers trained in the code of ethics in their first year
2022	**-27%** (9,8 $MtCO_2$)	**-37%** (0.383 Mt)	**1.5**	**84%** vs **74%**	**84%**	**96%** ethics **98%** corruption **98%** competition
	2030	2030	2025	2025	2023	2025
	-50% water intake vs 2017	**+30%** virgin raw materials avoided vs 2017	**100%** sites covered by a chemical inventory	**30%** female managers	**100%** covered by CARE program	**100%** responsible timber purchasing
2022	**-20%** (45 Mm^3)	**9,4 Mt** virgin raw materials avoided	**81%**	**27,4%**	**100%** employees covered	**95.7%**

1) TF2 = (number of reported accidents x 1,000,000) / (number of hours worked). Reported accidents = number of fatal accidents + accidents with lost time + accidents without lost time. Scope: employees, temporary workers and permanent subcontractors

SURFACE SOLUTIONS FOR A BETTER WORLD

ABRASIVES

Powerful, precise and user friendly **abrasive solutions** for every market (from highly technical precision engineering to DIY home improvement) and every step of the abrasive process.

78 PLANTS

Over **11,000** EMPLOYEES

MANUFACTURING sites in **28 COUNTRIES**

GLOBAL SALES OPERATIONS

OUR CLEAR COMMITMENTS ON SUSTAINABILITY

POSITION SUSTAINABILITY AS A DRIVER FOR GROWTH

- Decarbonization of our customers' applications
- Environmental product declaration / Life Cycle Assessment (LCA)
- Circular economy, recycling services
- Eco-innovation
- Evolution of products and services portfolio
- Clients and partners' engagement & communication

2030 TARGETS

- **100%** of product ranges covered by LCA (ISO 14040)
- **100%** of new product developments with a positive sustainability footprint (in at least one of three areas: health and wellness, circularity or carbon)

LIMIT OUR ENVIRONMENTAL FOOTPRINT

- Energy consumption and CO_2 emissions (Scope 1 & 2)
- Waste
- Water
- Biodiversity
- Pollution industrial risks

2025 TARGETS

- **-20%** CO_2 on Scope 1 & 2*
- **-15%** energy consumption
- **-50%** of non-recovered waste
- **-80%** water discharge

2030 TARGETS

- **-33%** on Scope 1 & 2*
- **-80%** of non-valorized residues
- **-50%** of water withdrawal
- **Zero** water discharge in drought areas
- **+30%** of avoided virgin raw material

TAKE ACTIONS ACROSS THE SUPPLY CHAIN

- Scope 3 CO_2 emissions**
- Responsible purchasing
- Green supply chain
- Local footprint development
- Sustainable packaging
- Suppliers engagement & communication

2025 TARGETS

- Cover CO_2 measurement of **90%** of goods purchased
- **-20%** CO_2 emissions on transport

2030 TARGETS

- **-16%** CO_2 emission on scope 3
- **100%** of packaging recyclable, **>30%** of recycled or bio-sourced packaging content

SOLUTIONS WITH END-USERS' SAFETY, HEALTH, COMFORT & WELLBEING AT HEART

- 100% REACH compliant
- Customer centricity on safety, health, comfort & wellbeing
- Safety, health, comfort & wellbeing for our own people
- Greener solutions that respect the planet and the people

ENCOURAGE EMPLOYEE ENGAGEMENT

- Visible measures
- Competencies
- Career development
- Employee engagement
- Ambassador network
- Communication & education on sustainability

*CALCULATION METHOD : 2025 vs 2010 at **isoproduction 2010** / 2030 vs **2017** in **absolute** terms
** including transport (upstream & downstream), purchases of goods and services

SAINT-GOBAIN ABRASIVES

● 10,500 Employees ● 61 Manufacturing Facilities ● 28 Countries

BONDED ABRASIVES	COATED ABRASIVES	THIN WHEELS	*SUPER ABRASIVES	CONSTRUCTION PRODUCTS
				
#1	#2	#1	#2	#3

NORTON SAINT-GOBAIN | NORTON SAINT-GOBAIN clipper rasta Abrasives of excellence | NORTON SAINT-GOBAIN WINTER CARBORUNDUM | flexovit MERIT | ATLAS

GRINDING

WE TOUCH THE WORLD

Every Continent

- EU — EMEA
- NA — NORTH AMERICA
- SA — SOUTH AMERICA
- AP — ASIA PACIFIC
- IN — INDIA

Every Market

ALL MARKETS

FOUNDRY · METAL FABRICATION · MACHINING & WELDING · PRIMARY STEEL · BEARINGS · GEAR · GLASS · TOOLS · ELECTRONIC COMPONENTS & DEVICES · FOOD PROCESSING · MEDICAL

WOODWORKING · AEROSPACE & GAS TURBINE · AUTOMOTIVE ENGINES, BODY & POWERTRAIN · MARINE · RAIL · AUTOMOTIVE AFTERMARKET · BUILDING & CONSTRUCTION · DIY & HOME IMPROVEMENT · MINING, OIL & GAS · WIND TURBINES

Every Appliction


ID Grinding


OD Grinding


Surface Grinding


Creepfeed Grinding


Roll Grinding


Worm grinding


Polishing


Wood Sanding


Wafer grinding & dicing for electronics


Glasses and ceramics


Steel Conditioning


Track/Rail Grinding


Cut-Off


Foundry, Portable


Off-hand & Robotic Belts


Low Pressure Grinding (debur, bevel)

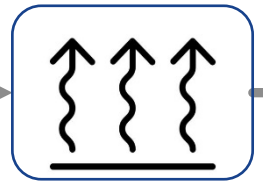
CASE STUDY : BONDED ABRASIVE PRODUCTS

PROCESS INVOLVES CONTINUOUS INNOVATION

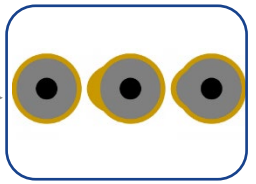

Raw material


Mixing


Molding


Drying


Firing


Finish to size

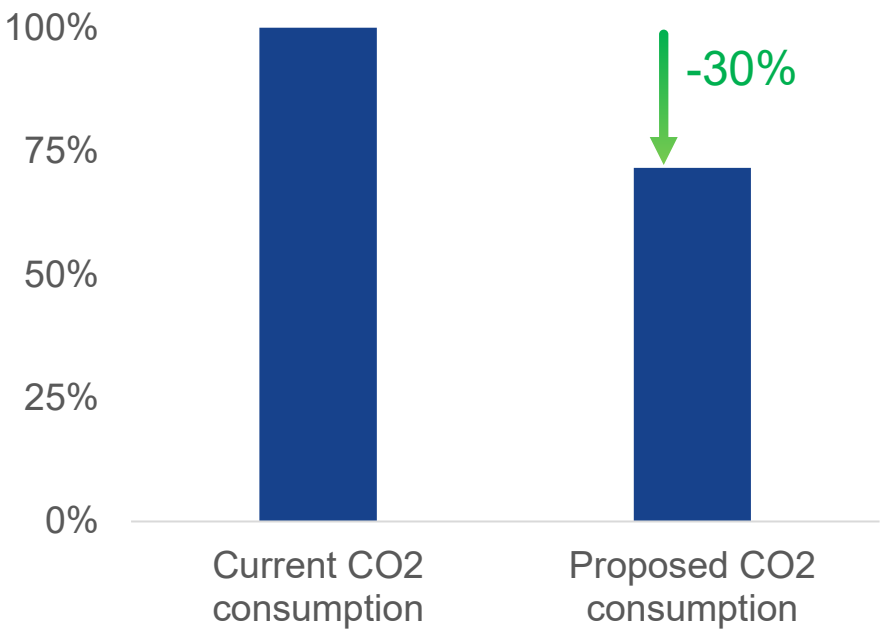

Inspection


Packaging

Recycling

~1/3 unusable

Recycle instead of landfill



CASE STUDY : BONDED ABRASIVE PRODUCTS

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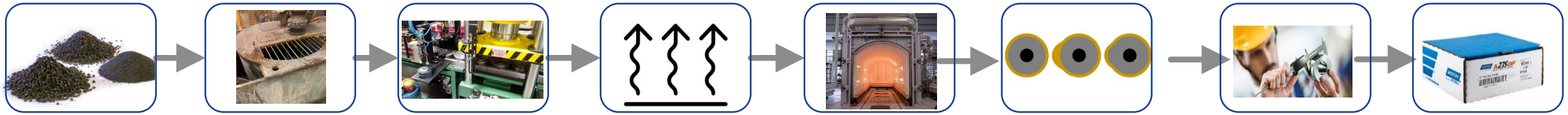


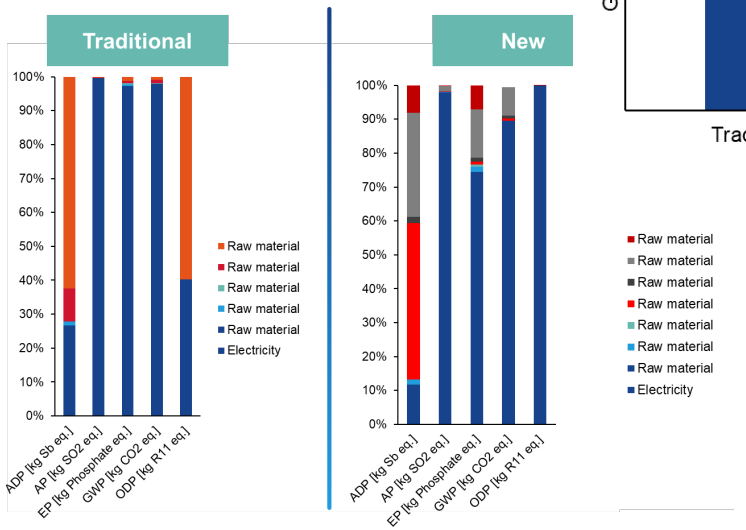
Near net shape processing
Aggregation of mfg. steps

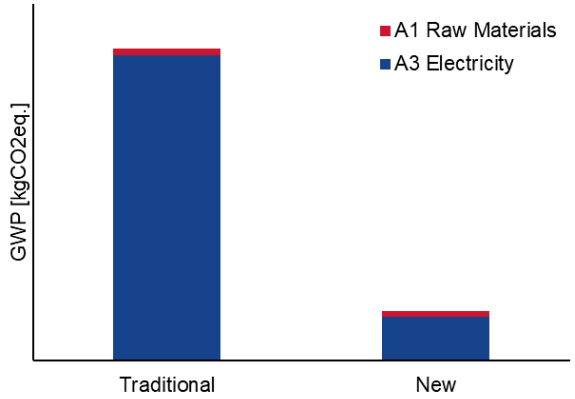
DESIGN
Realizing concept to model accuracy and adapting part design for optimal printing

MATERIAL DEVELOPMENT
Leveraging our center competencies in Rheology, formulation, ceramic science and slurries

3D PRINTING
Printing with a variety of AM technologies and ensuring optimal green part handling

POST-PROCESSING
Offering expertise in cleaning, thermal processing and finishing





85% reduction in CO_2 per wheel

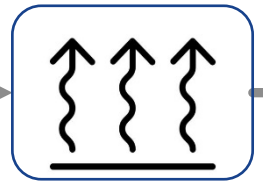
CASE STUDY : BONDED ABRASIVE PRODUCTS

PROCESS INVOLVES CONTINUOUS INNOVATION

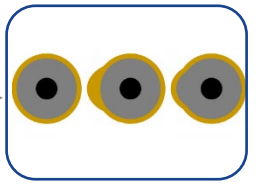

Raw material


Mixing


Molding


Drying

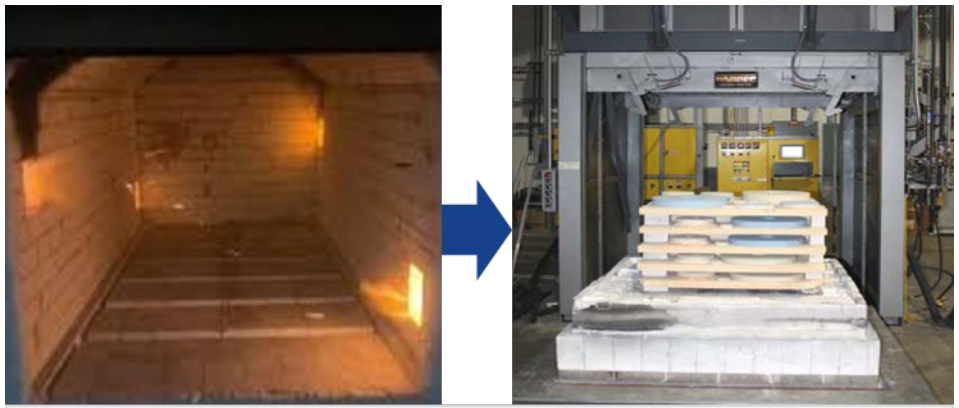

Firing

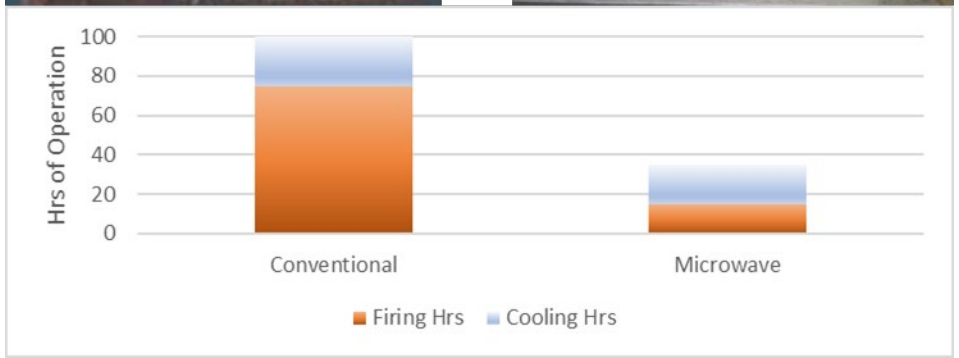

Finish to size

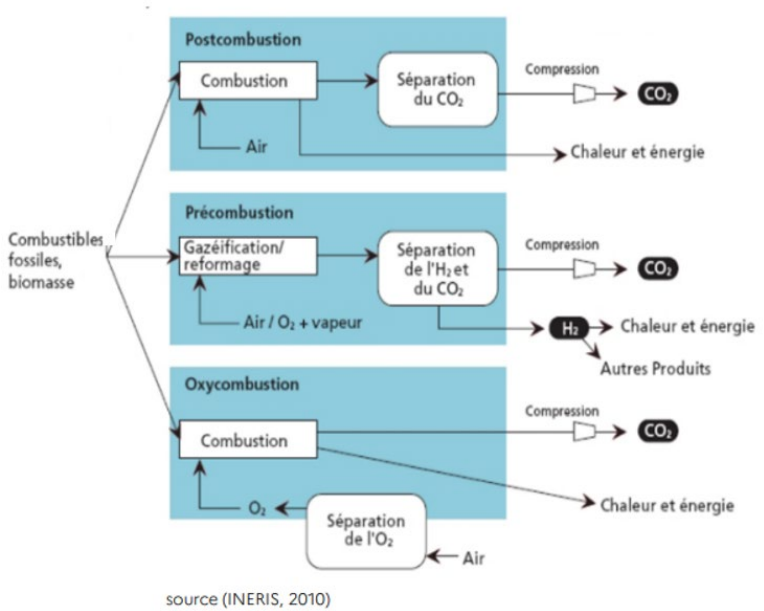

Inspection


Packaging

Electrification
Microwave Firing
Carbon Capture





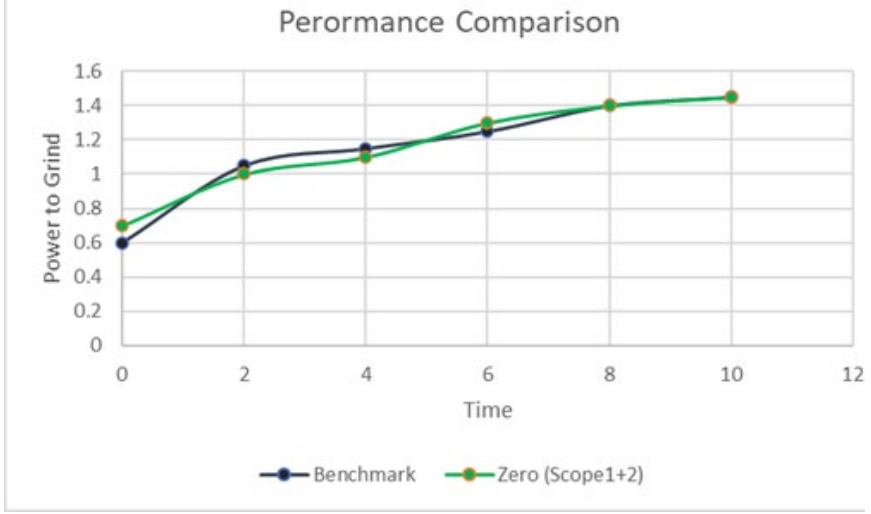


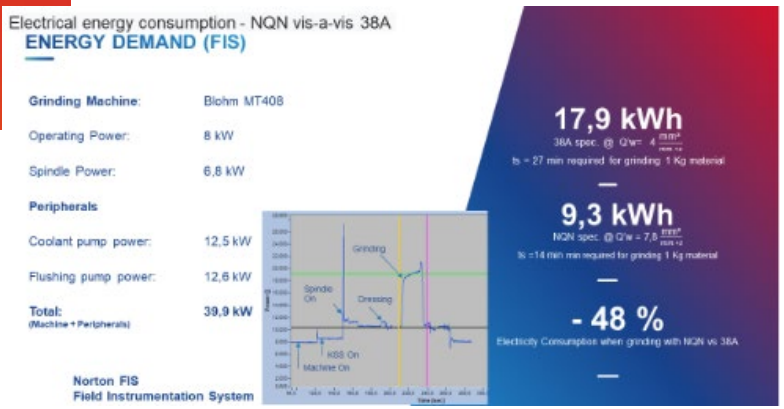
source (INERIS, 2010)

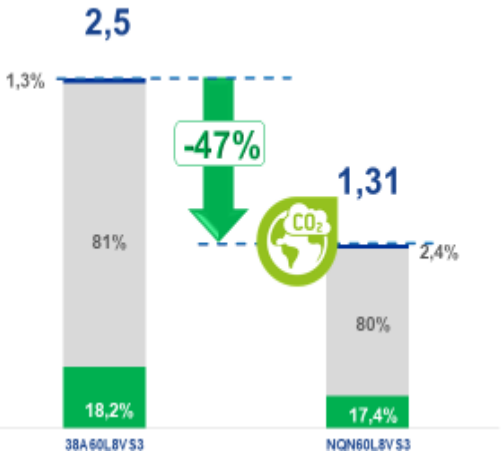
- Building Material
- Chemicals
- Additives
- Fuels
- Polymers
- Proteins

CASE STUDY : BONDED ABRASIVE PRODUCTS

PROCESS INVOLVES CONTINUOUS INNOVATION







18 % Cradle-to-gate (A1-A3)

80% Use Phase (B)

1-3% Recycle (C)

38A **2,5** kg_{eq} CO_2 per kg Material

NQN **1,31** kg_{eq} CO_2 per kg Material

Zero Scope1+Scope2 Manufacturing

With Products achieving upto 50% lower $CO2_{eq}$

TO SUMMARIZE..

KEY TO SUCCESS

- A shared vision
- Clear Metrics and Target
- Knowledge Development and Execution
  - Recycled and low Carbon RMs
  - Process Innovations with CO_2 reduction target
  - New Product Development to lower CO_2 in use
  - Scalable Carbon Capture Technologies