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قمة الصلب العربي الـ 17
و المعرض الدولي للحديد و الصلب
17th Arab Steel Summit
and International Iron and Steel Exhibition


قطر ستيل
QATAR STEEL
Regional Host Sponsor

World Steel Outlook

worldsteel
ASSOCIATION



World steel outlook

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World Steel Association

14 October 2024, Doha

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worldsteel – who we are

The World Steel Association (worldsteel) is a non-profit organisation.

It has headquarters in Brussels, Belgium. A second office in Beijing, China, opened in April 2006.

worldsteel represents steel producers, national and regional steel industry associations, and steel research institutes.

Members represent around 85% of global steel production.

worldsteel – our key focus areas

worldsteel is active in key areas of interest to the steel industry:



Automotive



Climate change
and environment



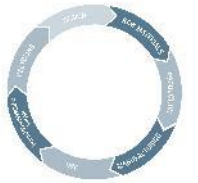
Communications



Construction



Education and
training



Life cycle
assessment



Raw materials



Safety and
health



Sustainability



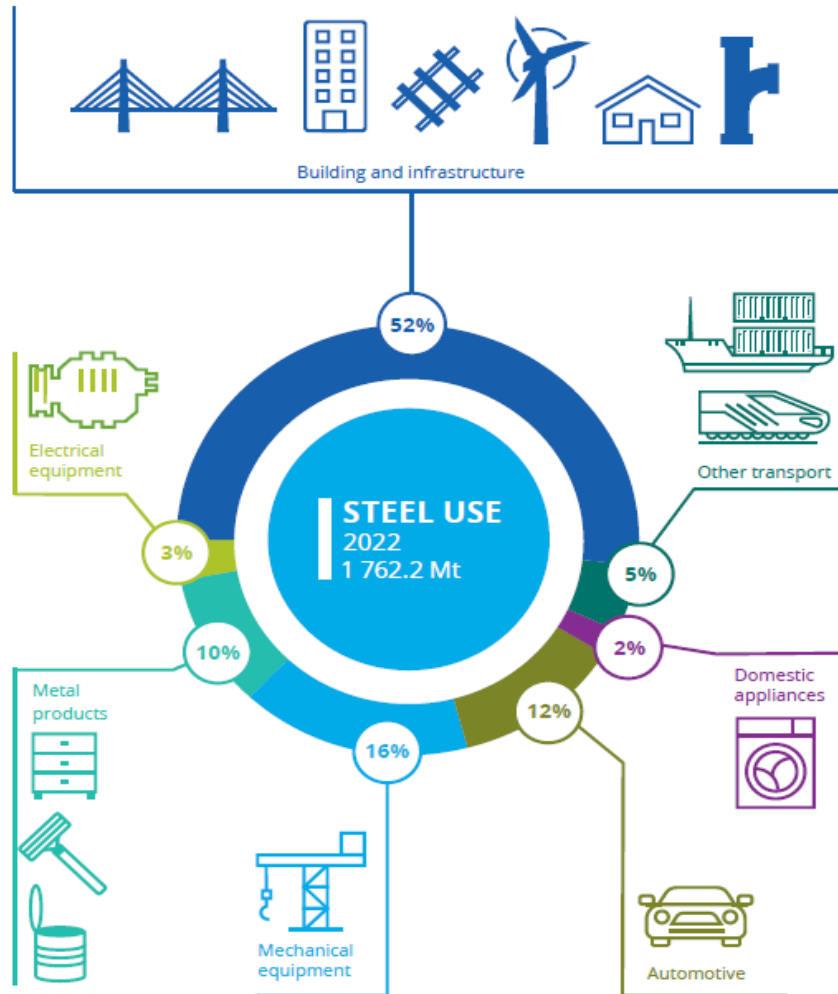
Steel market
analysis



Technology

■ Role of steel in the global economy

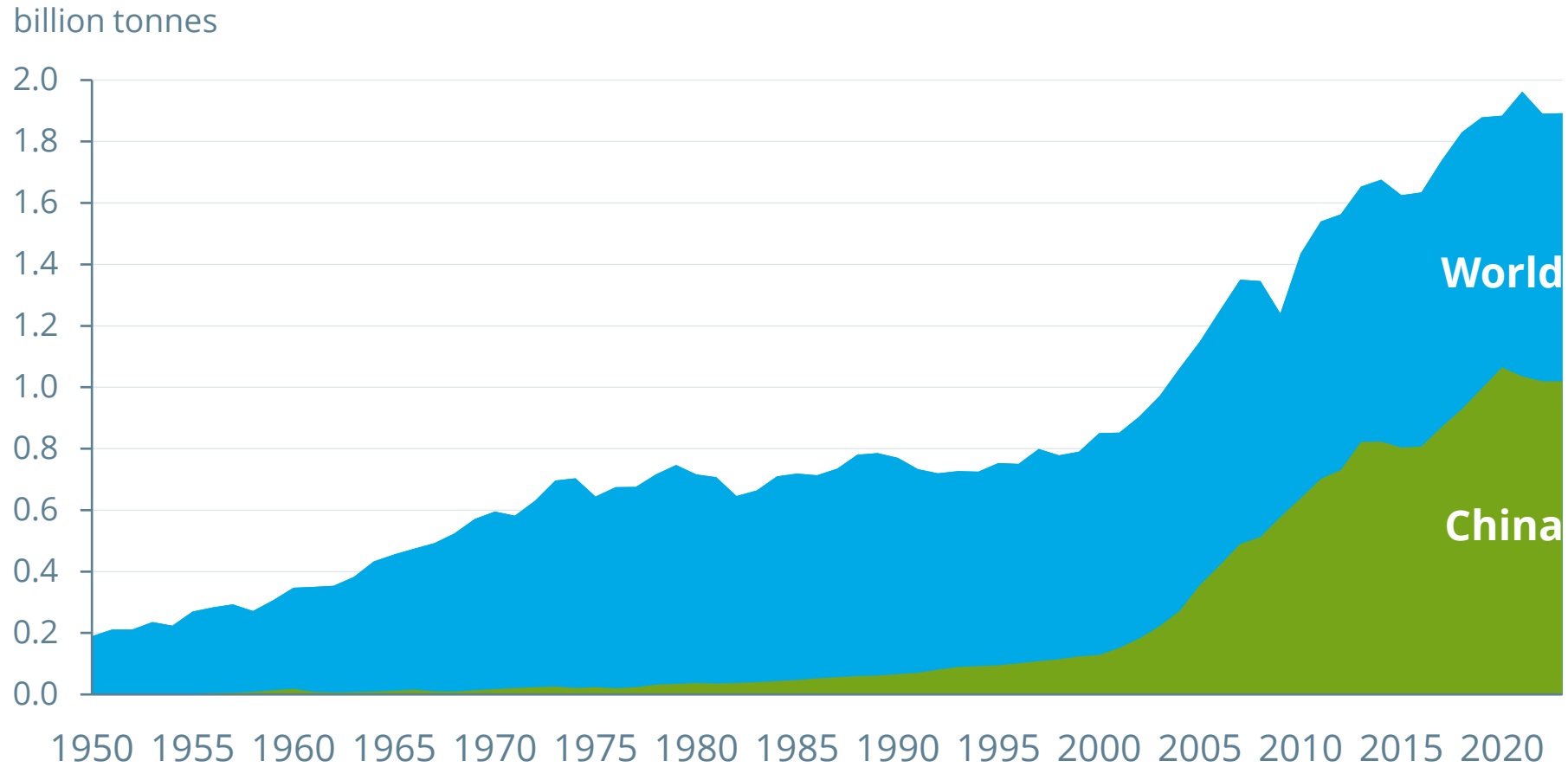
Steel is all around us



Steel use by sector



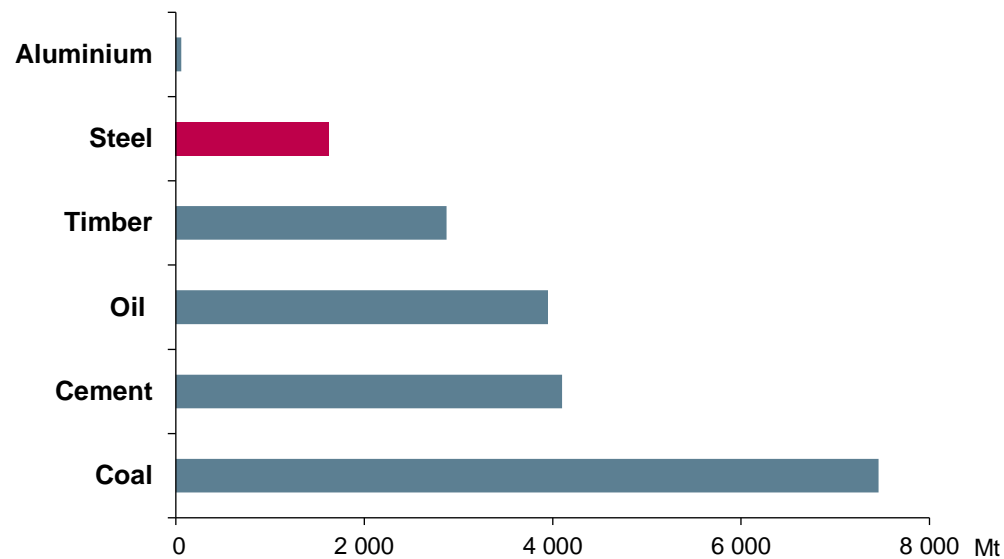
Global crude steel production 1950-2023



Why is steel important in the global economy

Production of steel and other commodities

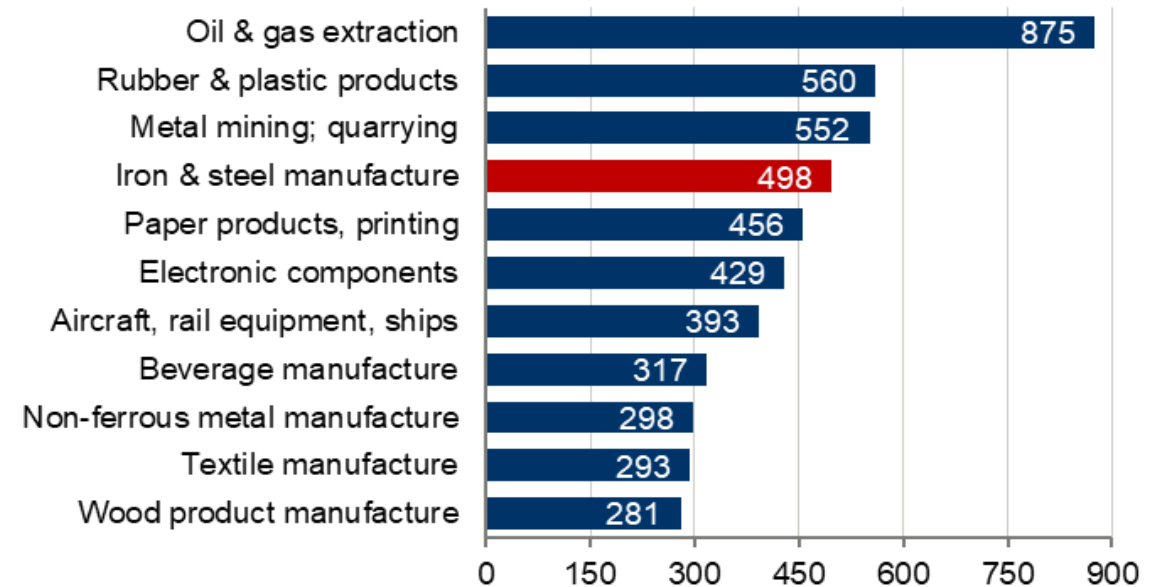
2016



Source: worldsteel, USGS, OECD, BP, FAO

Value added of selected industries

US \$ billion

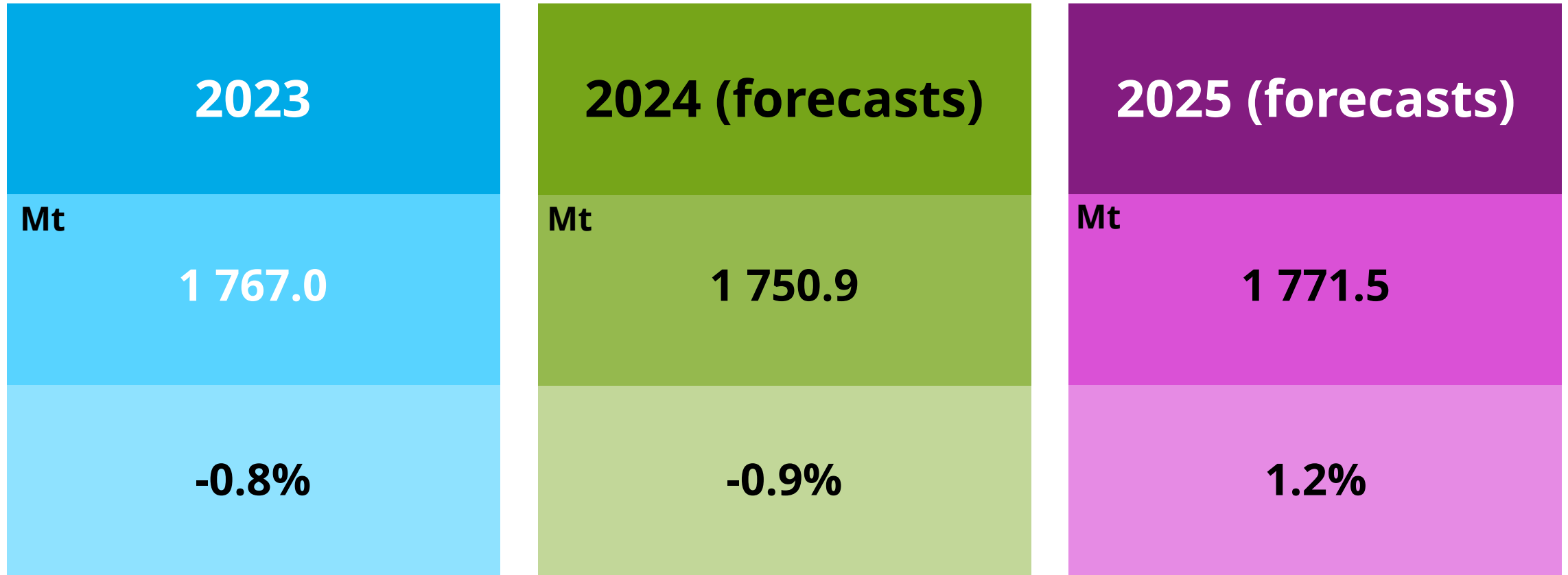


Source: Oxford Economics 2018

World steel outlook 2024-2025

Global overview

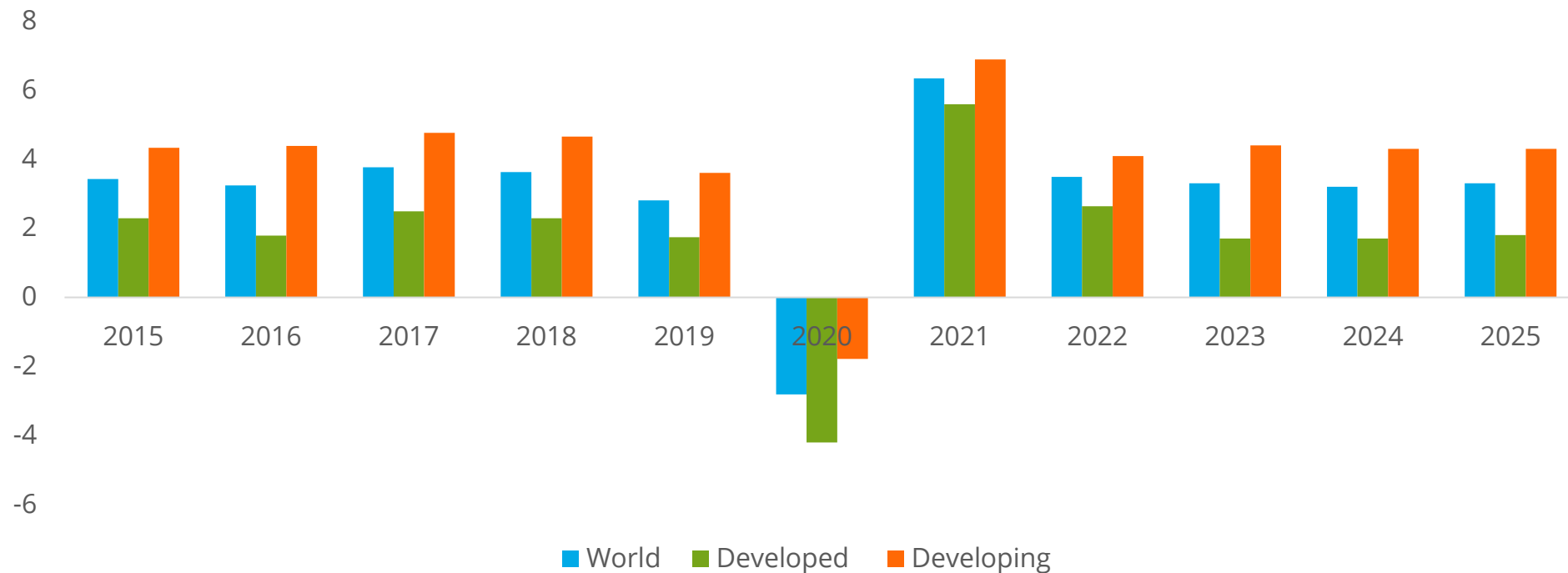
Steel demand, finished steel (SRO October 2024)



Refresher: April 2024 forecast: 2024 = 1.7%, 2025 = 1.2%

Despite headwinds, the global economy expected to settle in a steady growth path in 2024-2025

IMF GDP projections

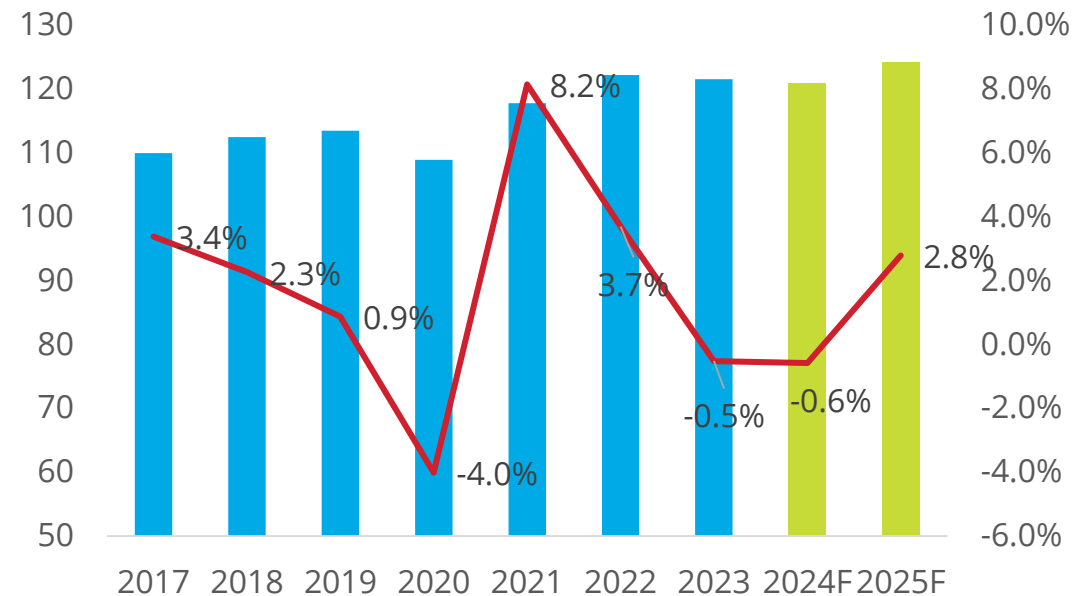


Source: IMF WEO July 2024 update

The global economy should gain further traction in 2025. Yet we continue to see risks mainly stemming from increasing geopolitical uncertainties and tensions

Weakness in housing construction activity persisted in 2024. Expected easing of financial conditions should trigger the start of a recovery in 2025

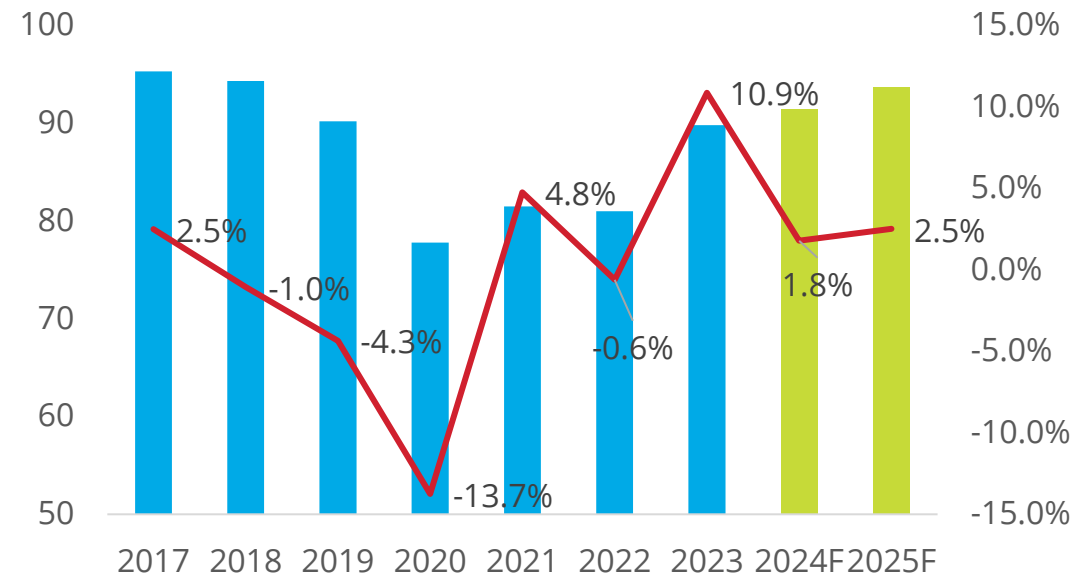
World excl. China Residential Construction Output
Multifamily segment, Index 2005=100 and annual growth (right axis)



Source: Oxford Economics

Automotive sector is cooling off, after an exceptional year of double-digit growth in 2023. We expect the growth to pick up in 2025

Global light vehicle production
Millions and annual growth (right axis)



Source: ING research

Regional overview

Steel demand, finished steel (SRO October 2024)

	Mt			%		
	2023	2024	2025	23/22	24/23	25/24
World	1 767.0	1 750.9	1 771.5	-0.8	-0.9	1.2
European Union (27) & United Kingdom	138.7	136.6	141.4	-8.7	-1.5	3.5
Other Europe	44.7	42.5	42.2	14.7	-5.0	-0.7
Russia & other CIS + Ukraine	60.3	60.5	60.0	11.5	0.3	-0.8
USMCA	132.5	131.3	133.4	-0.3	-0.9	1.6
Central & South America	45.7	45.6	47.8	1.0	-0.3	4.8
Africa	35.4	37.1	38.9	0.5	4.8	4.8
Middle East	54.2	56.9	58.7	4.2	4.9	3.3
Asia & Oceania	1 255.5	1 240.5	1 249.1	-1.2	-1.2	0.7
China	895.7	868.8	860.1	-3.3	-3.0	-1.0
India	132.8	143.4	155.6	14.4	8.0	8.5
Developing Asia excl. China & India	90.9	95.4	99.4	-1.4	5.0	4.2
Developed Asia	128.6	126.0	126.9	0.1	-2.0	0.7
World excl. China	871.3	882.1	911.4	2.0	1.2	3.3

China

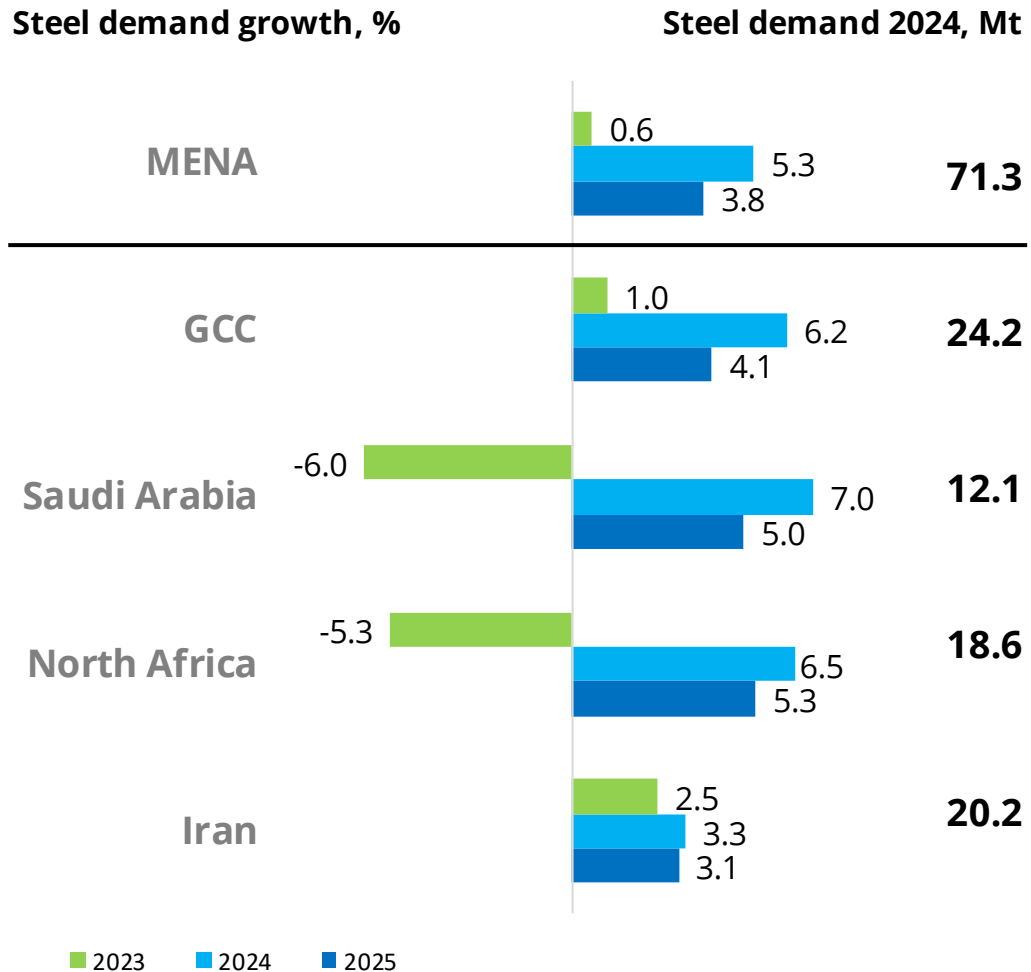
Steel demand, finished steel (SRO October 2024)

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- The decline in real estate investments has been more pronounced than initially anticipated. While infrastructure investments and manufacturing sectors in China demonstrated continued growth in steel demand throughout 2024, this positive momentum was insufficient to counterbalance the sharp downturn experienced in the real estate sector.
- We anticipate a continued decline in new starts and completions in 2025, and this to result in another drop in Chinese steel demand in 2025
- We acknowledge an upside risk to our 2025 forecast. There is a growing possibility of more substantial government intervention and support for the real economy, which could bolster Chinese steel demand in 2025.

Africa and the Middle East

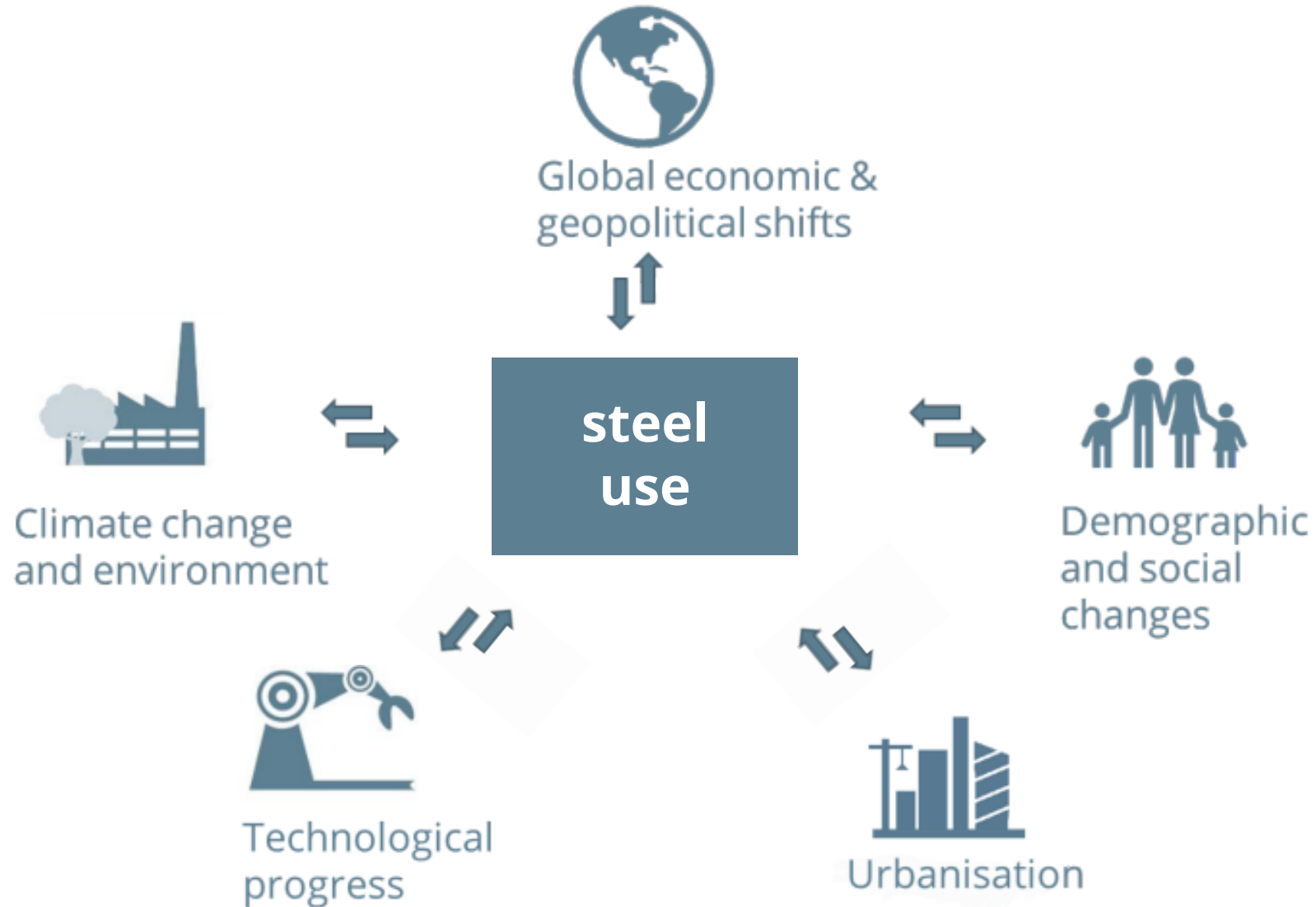
Steel demand, finished steel (SRO October 2024)



- A drop in the region’s steel demand in 2023 driven by Israel- Gaza War, Red Sea Crisis, weak external demand
- Strong rebound expected in the overall MENA region in 2024, driven by Improvements in external demand and strong project pipeline and economic diversification efforts in the GCC region and strength in housing activity in UAE
- A further escalation in geopolitical tensions and oil price volatility remains as key risks to our forecasts

■ Challenges ahead

Megatrends



Climate change



Promoting
material
efficiency and the
circular economy

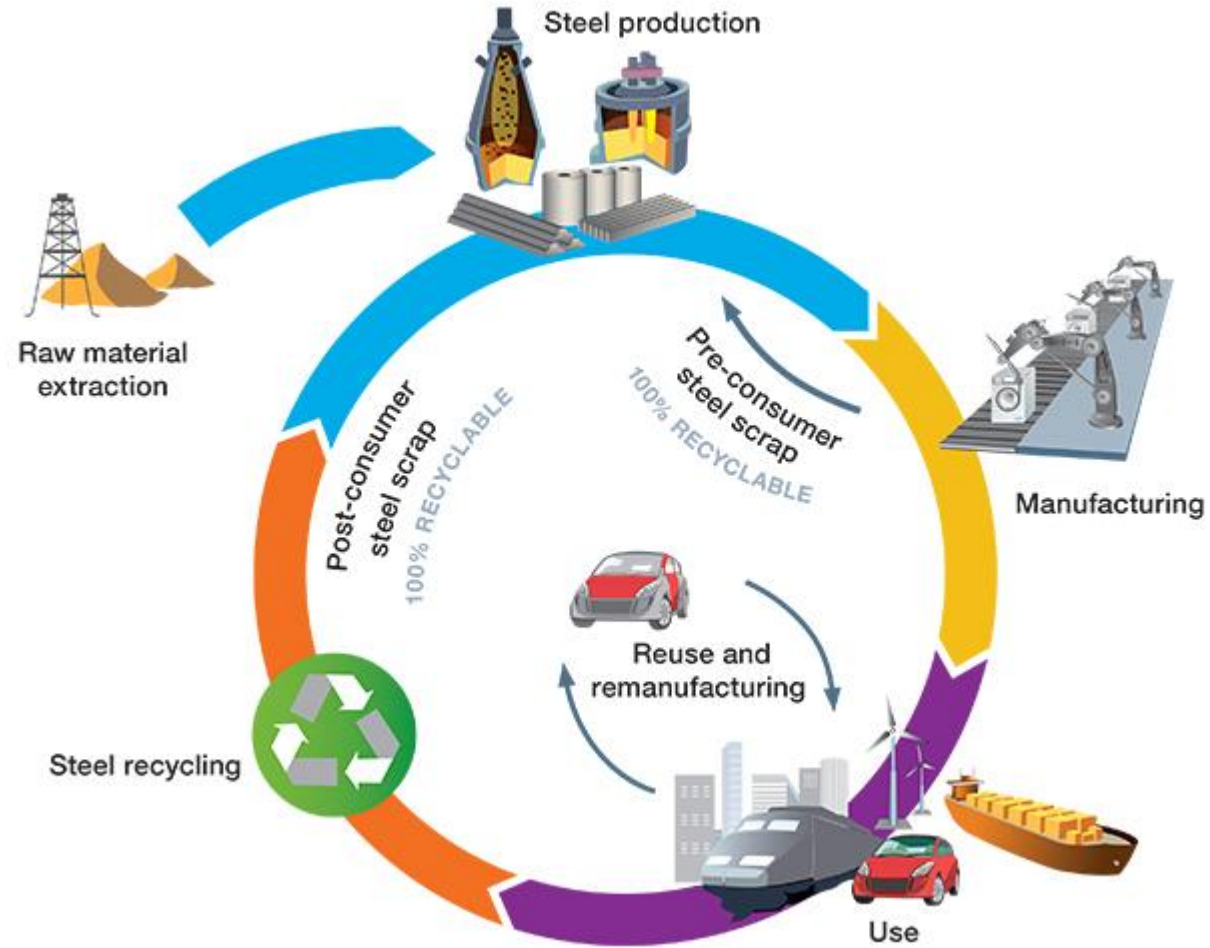


Reducing our
own impact



Developing
advanced steel
products to
enable societal
transformation

The life cycle of steel



Sustainability is crucial for the global steel industry

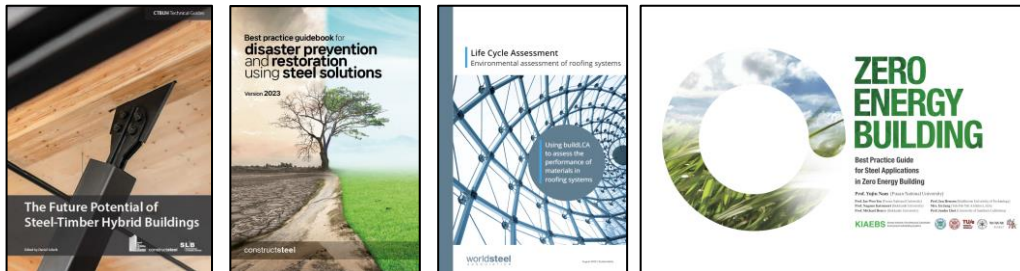


INDICATORS*	UNIT	2020	2021	2022
ENVIRONMENTAL PERFORMANCE				
1. CO2 emissions intensity	tonnes CO2 per tonne crude steel cast	1.88	1.91	1.91**
2. Energy intensity	GJ per tonne crude steel cast	20.38	21.02	20.99**
3. Material efficiency	%	97.86	97.56	97.65
4. Environmental management system	%	96.13	95.66	96.15
SOCIAL PERFORMANCE				
5. Lost time injury frequency rate	injuries per million hours worked	0.85	0.85	0.65
6. Employee training	training days per employee	7.15	6.72	7.78
ECONOMIC PERFORMANCE				
7. Investment in new processes and products	%	8.03	6.29	6.29
8. Economic value distributed	%	97.77	93.78	96.57

* For details on the calculation methodology for each of these indicators, please refer to this [section](#)
 ** For details on indicators 1 and 2, please refer to this [section](#)

Solution Development

- ✓ **Bridges**
- ✓ **Zero Energy Building**
- ✓ **Steel-Concrete Composite**
- ✓ **Steel-Timber Composite**
- ✓ **Life Cycle Assessment**
- ✓ **High Strength Steel**
- ✓ **Industrialization of Construction**
- ✓ **Disaster Prevention & Restoration**
- ✓ **Aesthetics** (under review)



Ecosystem Development

- ✓ **Communication**
- ✓ **Steel Solution Platform**
- ✓ **Global Advisory Council**
- ✓ **Education**
- ✓ **constructsteel Award**
- ✓ **Annual conference**
- ✓ **Advocacy**



Education videos



Project Stories



Annual Conference
Seoul 2023



Best Project
Japan National Stadium



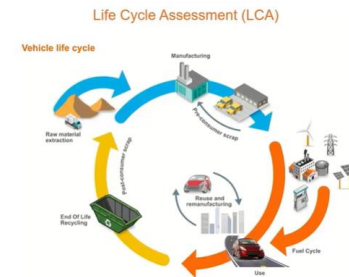
WorldAutoSteel

Current activity focus

Steel E-Motive

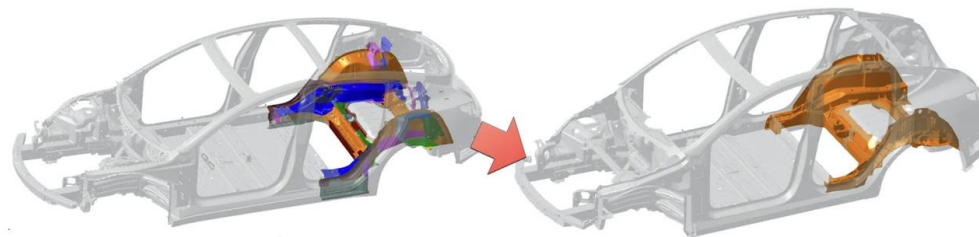


LCA



- Provide technical guidance, especially on automotive LCA
- Help develop LCA methods and tools
- Support LCA research at leading universities
- Advocate for the use of LCA generally and in automotive emissions policy

HPDC (High Pressure Die Casting)



Model 3 rear body
70 pieces of metal

Model Y rear body
2 pieces of metal (eventually a single piece)

LME (Liquid Metal Embrittlement)

4 Measures for Preventing Liquid Metal Embrittlement

A three-year study of Liquid Metal Embrittlement (LME) potential occurrence in welding Advanced High-Strength Steels identified four key measures to mitigate or prevent it. For an in-depth review of the study and its findings, download a free copy of the report at worldsteel.org/Projects.

- 1 Avoid excessive heat input.**
Higher penetration depth cracking was only observed in experiments during welding under extremely high external loads (80% of YS) conducted in parallel with significantly increased weld times.
- 2 Increase RSW electrode (working plane) diameter and avoid sharp edges.**
In general, to dressing to increase the working plane diameter of the electrodes, or use of larger diameter electrodes, resulted in significant reduction in LME sensitivity. When using a flat headed cap with reduced or beveled edges (i.e., avoid sharp edges), even the most aggressive welding schedules (peak times greater than 1000 ms) did not produce cracks. In-depth analysis revealed that larger electrodes tip geometries clearly reduce the local plastic deformation around the indentation.
- 3 Employ suitable hold times to allow for sufficient heat dissipation.**
Depending on the scenario, the selection of the correct hold time alone can make the difference between crack-free welds and the presence of LME. Sufficient hold times allow liquid zinc to recede before the compressive force is removed. Extended hold times significantly reduce temperature at electrode lift-off and thermal stresses, minimizing the LME potential.
- 4 Use correct welding parameters and equipment.**
No significant cracking occurred in any of the experimental AHSS material stack-up combinations when using standard process parameters. Light cracking occurred in most welds when subjected to poor practices, such as low electrode coating rates, worn electrode caps, electrode positioning deviations or excessive material gaps.

INSIGHT

In study experiments, including analyses of 13 different AHSS grades and a variety of material test combinations, LME cracks only occurred when there were deviations from proper welding parameters and set-up conditions.

LME study commissioned by: WorldAutoSteel and conducted by: WLF Experimental Research, Fraunhofer Simulation, and Institut für Schweißtechnik Non-Destructive Testing.

steeluniversity



Skill Directory

Skill and knowledge directory that represent the current and future training needs of the steel sector.



Capability Assessor

Solutions to deliver capability assessments to organization and individuals to identify skill gaps and design customized development path.



Learning solution Directory

Collection of learning solutions provided by experts and organizations.

3,100+ courses
15,000+ learners/yr



Micro-Credentials

Enables learners to acquire, store, and share their credentials across platforms, enhancing their employability and professional development in a rapidly changing job market.



Steel Production and Metallurgy



Technology and Innovation



Quality Control and Materials Testing



Construction and Structural Engineering



Automotive Engineering and Design



Environmental Engineering and Sustainability



Business, Management, and Entrepreneurship

Summary

Summary

- Global steel demand to enter a phase of moderate growth in 2025
- Progress made in stabilization of China's real estate sector is a key determinant of the global steel demand outlook 2025/2026
- Broad-based growth in the world-excluding China
- Broad-based recovery of steel using sectors
- Risks associated to development of geopolitical situation

Thank you for your attention



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A S S O C I A T I O N

worldsteel.org | constructsteel.org | steeluniversity.org | worldautosteel.org | worldstainless.org

