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Hillfoot Steel Limited

Environmental Product Declaration (Generic)

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1. PRODUCT DESCRIPTION

Hillfoot Steel Ltd is a leading UK metals stockholder of ferrous and non ferrous alloys in various forms, such as bars and forgings in a diverse range of shapes and sizes.

1.1. APPLICATION

The product is supplied to a variety of industrial sectors, such as:

- Motorsport
- Defence
- Aerospace
- Mining
- Renewable energy
- Off-highway
- Oil & Gas
- Rail

From an engineering perspective, the raw material supplied by Hillfoot Steel Ltd yields a varied array of applications. They are fundamental, especially with the production of moving parts in heavy machinery manufacturing, automobile engine and transmission, defence equipment, aircraft components, wind turbines, and various oilfield applications.

1.2. TECHNICAL DATA

This Environmental Product Declaration (EPD) provides a comprehensive summary of the environmental aspects associated with the lifecycle of our varied products.

The EPD harmonizes technical data derived from our company's rigorous quality and environmental management systems. The certification to ISO 9001, ISO 14001, ISO 45001 underlines the high-quality management maintained throughout our operations.

Our confidence in the product and its compliance is supported by our Certification of Conformity. All the required aspects are validated and certified in accordance with the client's and/ or national specifications.

In respect of the complexity and uniqueness of our operations, specific values such as environmental impact data, life cycle assessment data, functional unit description, end-of-life scenarios, and allocation methods are drawn from the respective environmental standards and executed best practices within the industry, specific to our site of operation in Sheffield, UK.

Hillfoot Steel Ltd's EPD is a testament to our promise to uphold sustainability, transparency, and quality in the lifecycle of our products, offering essential information to our customer base, stakeholders, and regulatory bodies. This declaration ascertains that our products consistently meet the agreed standards for environmental performance, affirming our commitment to sustainability and quality in steel production and supply.

1.3. Delivery Status

The dimensions of declared products may vary according to the intended application.

1.4. Base Materials & Ancillary Materials

Our main base materials are ferrous and non ferrous alloys, typically in a bar form.

Our key product portfolio includes:

- Engineering steel: Carbon and alloy steel in drawn, hot rolled and forged condition (s) with and without heat treatment
- Non- ferrous alloys
- Cast irons with and without heat treatment (s)
- Special alloys for bespoke industries, such as Oil & Gas and Aerospace
- Bespoke alloys, ferrous and non- ferrous for specific applications
- Stainless and tool steels
- Shaped forgings
- Partially or fully machined components made from the above raw materials

The ancillary materials would typically be other elements involved in the production process or final product but not part of the actual metal itself. These could include:

- Cutting Agents: Cooling liquids/ lubricants etc that are used in the process of cutting the outputs.
- Coatings: These can include paints or other protective coatings that prevent rust.
- Packaging Materials: Depending on the method of transport, our products might require certain packaging or binding materials for safe transit.

1.5. Manufacture

The manufacturing process for our products for this Environmental Product Declaration (EPD) include the following stages:

- Procurement: The process begins with procuring raw materials from carefully selected partners from our AVL
- Inventory Management: The procured materials are stored appropriately in inside or outside storage areas at our Sheffield site
- Sawing: we offer cutting to the required sizes and tolerances using our saws capable of processing product of varying size and hardness
- Quality Assurance: The processing is followed by rigorous quality checks to ensure the quality and compliance.
- Packaging & Delivery: The final product is packaged appropriately and delivered to customers using a network of hauliers or our own transport.

Throughout these manufacturing processes, Hillfoot Steel Ltd adheres to the ISO 9001, ISO 14001, and ISO 45001 quality, environmental, and safety standards.
The entire process factors into the data collected under the EPD.

1.6. Environmental, Health and Safety during manufacturing processes

Our goal is to sustain a safe working environment that prioritizes the well-being of all workers and minimal environmental impact. Our commitment to a comprehensive EHS management system is integral to our overall business strategy, enhancing our organization's reputation and helping to prevent the costs associated with accidents and environmental incidents.

1.6.1 Environmental Compliance

In alignment with environmental regulations, Hillfoot Steel Ltd integrates various components into its operations. Our adherence to ISO 14001 helps in implementing a robust environmental management system.

We ensure efficient use of energy across all operations, particularly high-energy processes like cutting, and make it a priority to minimize waste by maximizing efficiency. We follow appropriate waste management practices, dealing with ferrous and non- ferrous offcuts and other waste produced during manufacturing or support processes. We monitor air and water emissions resulting from manufacturing processes and ensure they comply with legal and policy-based thresholds.

1.6.2 Health and Safety:

Following the ISO 45001 standard, we effectively manage our Occupational Health and Safety Management System. It involves rigorous precautions which we actively take to reduce the risk of accidents. All our employees and contractors are trained in hazard identification, risk assessments, and preventive measures.

Our equipment, such as overhead cranes and cutting machines, are regularly inspected, and maintained. Operators are specifically trained for safe operations. We provide and enforce the use of Personal Protective Equipment (PPE), including safety helmets, safety footwear, hi-visibility clothing, and any job-specific PPE such as hearing protection plugs or safety goggles.

Emergency plans and procedures are in place at our facility, inclusive of readily available first aid and fire-fighting equipment and training for our staff. We periodically review health and safety performance against set targets, continuously improving our occupational health and safety management system.

1.7. Production Processing / Installation

1.7.1 The production processing

The process for Hillfoot Steel Ltd.'s production of the raw material begins with the procurement of the product itself ensuring that the materials are sourced from rigorously selected suppliers from our AVL.

Following procurement, the product is either measured and packaged or sawn to various dimensions according to customers requirements.

Depending on customer demands, additional processes might be conducted by the use of the sub- contractors. Those processes can include off- site heat treatment or machining.

Hillfoot Steel Ltd conducts rigorous quality control and testing. This includes the use of Ultrasonic Testing, where required (performed on site, by an independent sub- contractor) and various offsite metal testing services. The latter includes metallographic testing, mechanical testing and chemical analysis.

Once the outputs are finished, they undergo appropriate packaging for transit.
The packaging materials used are robust to protect the products during transportation and allow safe offloading.

1.7.2 Installation

The installation process for the metal components from Hilloot Steel Ltd depends on their specific application. However, general stages include:

- Delivery and unloading to the client's site — usually utilizing cranes, fork trucks or similar equipment.
- Storage - the storage of materials, where they are kept securely to avoid any damage until they are ready to be converted into parts and/ or installed.
- Further processing - depending on the project's needs, the components may undergo further machining, such as cutting or drilling, milling, coating, finishing treatments, etc.
- Assembly - with the help of cranes and other equipment, the parts are then assembled according to the their design.
- Safety inspection and testing - after assembly is complete, a thorough safety inspection is conducted to verify safety and conformity with the project's specifications.

The above presents the typical processing and installation of the product provided by Hillfoot Steel Ltd, however each project can be unique and the exact installation process may vary.

1.8. PACKAGING

Packaging materials include a variety of materials and methods:

- Metal Banding: could be used to consolidate and secure the product for transit.
- Nylon Banding: Similar to the above, used typically for lower weight consignments
- Timber Pallets and Collars: used for products and components where they can be arranged and securely bound on wooden pallets.
- Protective Wraps: weather-resistant plastic or fabric wraps may be used for protecting the outputs from environmental exposure.
- Hessian sacks: used for load consolidation whilst maintaining the traceability or standalone for delivery of low weight consignments.

An accompaniment for the packaged product usually includes labels or tags that contain necessary product and handling information and QR/BAR codes for better traceability.

However, the entire life cycle of the packaging material, including its production, use, and disposal, should be considered under the Environmental Product Declaration (EPD).

Eco-friendly packaging, recyclable materials and minimalistic packaging techniques should be prioritized. It is essential that packaging does not contribute to unnecessary waste and can be recycled or properly disposed of at the end of its life.

Further waste can be reduced by correct load consolidation and accurate production planning allowing combined consignments with reduced packaging materials, as well as lesser impact for the transportation.

Reviewing packaging types and materials regularly and adapting more sustainable practices consequently enhances the overall environmental performance of Hillfoot Steel Ltd.'s operations. Our pallet and collar collection and recycling scheme(s) contribute to a significant reduction in waste by repurposing the packaging again & again.

As an Environmental Product Declaration (EPD) requires specific and data-based details, an environmental consultant's assistance would be crucial in accurately accounting for the environmental impacts of packaging.

1.9. Conditions of use

The clientele of Hillfoot Steel Ltd incorporates a very broad range of engineering processors and OEM's:

- Modes of Use/ Applications: The products may be used in a variety of applications, typically where strength and durability are the criteria of design.
- Design applicability: The products must be able to resist the loads in service when designed, processed and used within their capability and limits.
- Environmental conditions: The products must withstand the environmental conditions when processed, protected and used in line with their capability and limits.
- Maintenance: The requirement for regular checks, possible external treatments against rust and corrosion, or other routine maintenance during their service life.
- Compliance to relevant regulations: The products are certified as compliant using Certificate of Conformity at the time of the shipment and may be required to adhere to further requirements, laws and regulations when imposed by the subsequent re-processing, assembly and/ or the end use.

It is important to note that more specific conditions of use can vary based on the individual project and location.

1.10. Environmental, Health and Safety During Use

While metal components themselves might not present significant EHS risks during their usage, the activities around their use might. Adequate measures should be in place to ensure that the environmental impact is minimized, and health and safety is maintained during the product's usage phase.

It is important to remember that each application is unique, and specific EHS precautions might vary based on the real-world utilization of the product.

This EPD should be combined with project-specific considerations for a complete environmental health and safety analysis.

1.10.1 Environmental

There are minimal environmental impacts during the use phase our raw material(s), provided they have been installed and are being used correctly.
However, considerations should be made regarding:

- Maintenance Activities that might have an environmental impact include painting or treating the metal components, which could involve the use of chemicals. Any waste generated during maintenance should be disposed of following environmental regulations.
- Waste Efficiency: The use of good quality raw materials & high quality of the system assembly can contribute to a reduced deterioration of the wear parts thus lowering its environmental impact.

1.10.2 Health & Safety

It is critical to prioritize safety during the use phase of metal components. This involves:

- Inspections and Maintenance: Regular safety inspections should be carried out to ensure the components are in good condition and are not presenting any hazards such as sharp edges or instability.
- Proper Usage: The components should be used within their capability and limits.
  A consideration during the design, processing and use is required as overloading or improper modifications can lead to safety risks.

1.11. REFERENCE SERVICE LIFE

- Expected Service Life: Product designers determine the typical lifespan of metal products under normal conditions. This is based on technical specifications, materials capabilities, historical data, or industry standards. For metal components the service life can be relatively short (for any wear parts) or several decades.
- Factors Influencing Service Life: Component manufacturers consider the factors that can affect the service life of the products. These could include corrosive environmental conditions, loading conditions, damage due to accidents, or quality of installation and maintenance.
- Maintenance Recommendations: Metal components can be enhanced by protective treatments and coatings. Product users are typically advised on recommended maintenance practices that can help extend the product's service life which may involve regular inspections, timely repairs, cleaning procedures, etc.
- End of Life: All metal products are often recyclable, which significantly reduces their overall environmental impact as they can be remade and re-recycled indefinitely.

1.12. EXTRAORDINARY EFFECTS

For raw materials supplied by Hillfoot Steel Ltd, the following are to be considered extraordinary effects:

- Natural Disasters: Events such as earthquakes, floods, storms, or fires could cause damage to storage facilities or installed products, leading to premature end-of-life and replacement need.
- Major Accidents: Any accidents during the transportation or installation of the components that could result in significant damage or loss of the product.
- Extreme Wear and Tear: If the parts are not assembled correctly or are used in a corrosive or high-stress environment that significantly reduces the product's life expectancy and/ or exceeds the products capabilities.

1.13. RE USE PHASE

For Hillfoot Steel Ltd's products, the following may apply during the reuse phase, depending on its work life application:

- Reuse: Metals are one of the most reusable materials, the components can be dismantled and the usable pieces can be utilized in another project or application, reducing the consumption of new resources or sold for scrap.
- Reselling: After the initial project, the elements can be resold to other businesses or industries that can reuse them in other applications.
- Repurposing: Metal components can be repurposed for a different application, such as architectural elements, furniture, or decoration, without substantially changing its form or going under a major recycling process.

The ability and efficiency to reuse metal components could depend on several factors, including design for disassembly in the original construction, the condition of the part after the primary use, and market factors such as demand for reused metals

1.14. DISPOSAL

- Recycling: Metals are 100% recyclable and can be reused an indefinite number of times without losing its quality. At the end of its life, the products can be collected and sent back to the foundries for recycling. Here, the metal is melted down and can be completely reconstituted into new products.
- Landfill: While metals can be disposed of in a landfill, recycling is the preferred option due to the high recyclability.
- Waste Management Legislation: To ensure that the disposal of the product does not negatively impact the environment, adhering to waste management legislation in the country where the material will be disposed of is crucial.

2. Life Cycle Assessment (LCA):

A Life Cycle Assessment (LCA) offers a comprehensive evaluation of the environmental impacts that occur from the inception to the end-of-life of a product, accounting for everything from raw material extraction to disposal or recycling.

An LCA for the products of Hillfoot Steel Ltd essentially includes components like raw material sourcing, manufacturing processes, packaging & distribution, use phase & maintenance, and eventually, disposal or recycling.

Detailed information encompassing energy usage, inputs and outputs, waste generation, emissions, and logistics is critical for determining the environmental footprint all throughout the lifecycle of the product.

The Life Cycle Assessment has been divided into five units. These are:

- Unit **a** – Procurement
- Unit **b** - Process
- Unit **c** – Delivery
- Unit **d** - Working Life
- Unit **e** - End of life / Recycle.

Each unit **a** to **e** consist of the Scope 1, Scope 2, and Scope 3.

All information reported is from the last 12 month period and is reviewed and/ or updated as necessary every 12 months. Where information cannot be ascertained or has not been disclosed, the term Not Declared (ND) will be used.

Whenever possible averages have been avoided and primary data have been used.

The visual graph of the LCA can be found in the **Appendix I.**

3. Environmental Impact Data:

Analysis of environmental impacts of the product over its lifecycle can be found in the **Appendix II.** The impacts include energy consumption, air emissions, water emissions, waste generation and resource use.

4. Functional Unit:

The functional units to which the impacts of the LCA are referred are described in Appendix II.

5. Reference Standards:

Hillfoot Steel Ltd is certified under international standards including ISO 14001:2015 for Environmental Management, ISO 9001:2015 for Quality Management, and ISO 45001 for Occupational Health and Safety. These standards serve as guiding principles to maintain our commitment towards quality, environment, and worker's safety.

6. End of Life Scenarios:

When our products reach the end of their useful life in construction, they can be salvaged, recycled, and reused, thus reducing the requirement for new raw materials and the energy needed to produce them. The EOL scenarios could involve recycling (melting the metals down for re-production), disposal (e.g., landfill, although this would not be recommended for metals due to its recyclability), or perhaps reuse in another construction application.

7. Geographic Representative:

The geographic area assigned for this evaluation encapsulates our Site in Sheffield, UK.

Additionally, the geographical scope of the Environmental Product Declaration (EPD) encompasses the entirety of the UK and Ireland, being our primary markets.

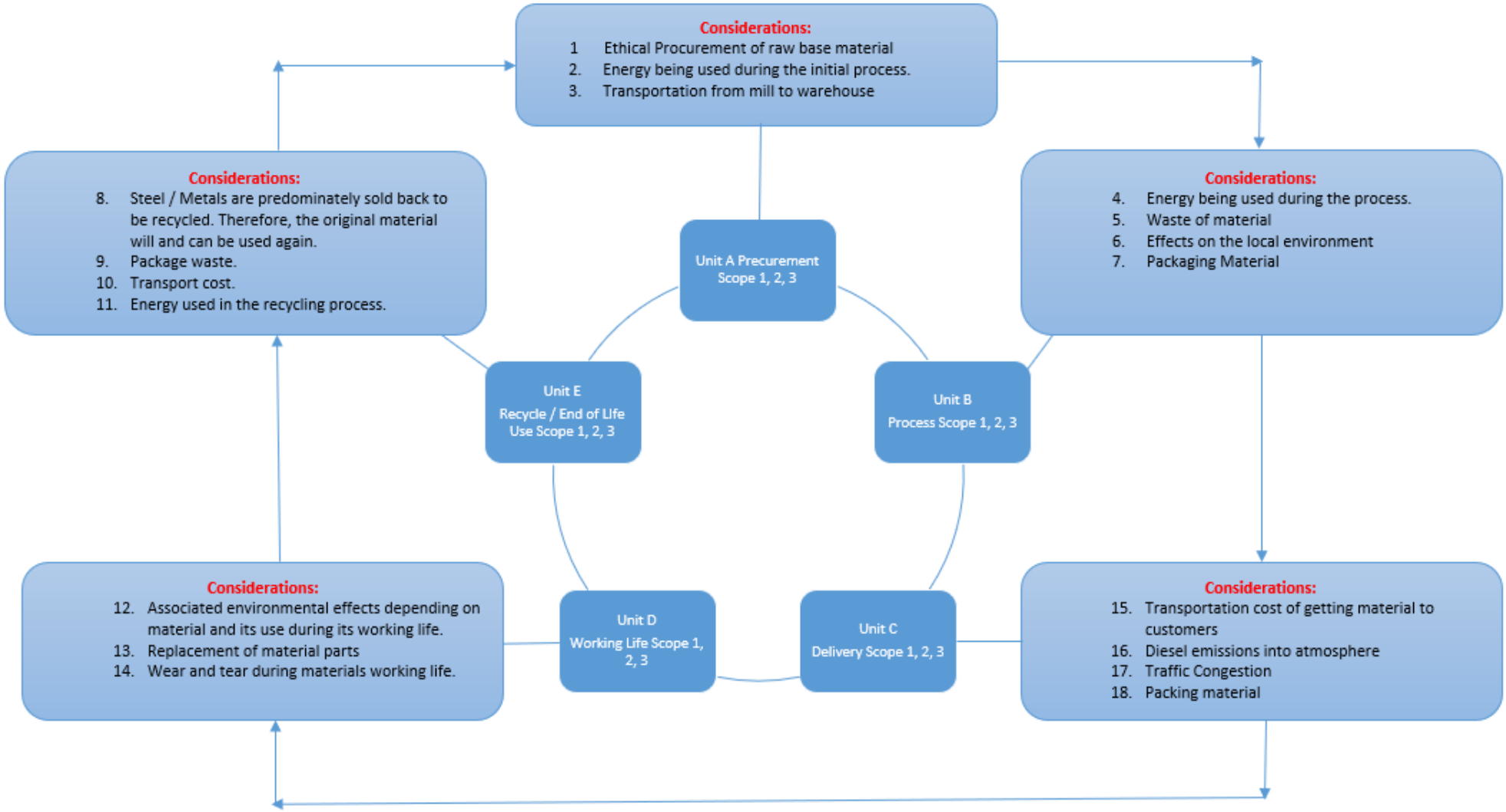
8. Allocation Methods:

Part of the Hillfoot Steel Ltd life cycle assessment involves organising the environmental impacts of a product by lifecycle stage. Several methods are used, such as allocating based on mass, energy content or economic value. The method used is specified in detail, such as equally dividing the impacts between co-products or dividing impacts based on differing use intensities or useful lifespan of those co-products.

9. Compatibility:

It is crucial that the metal products processed by Hillfoot Steel Ltd align with a range of environmental and sustainability guidelines, particularly those associated with eco-friendly manufacturing practices by ensuring compatibility with globally acknowledged environmental performance standards.

Life Cycle Assessment



APPENDIX II - ANALYSIS OF ENVIRONMENTAL IMPACTS OF THE PRODUCT OVER ITS LIFECYCLE

	Unit **a**			Unit **b**			Unit **c**				Unit **d**			Unit **e**		
	Procurement			Process			Delivery				Working Life			End of Life/Recycle		
Scope	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3	Scope 1a	Scope 1b	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3
Geography	GLO	GLO	GLO	UK	UK	UK	UK	UK	UK	UK	GLO	GLO	GLO	GLO	GLO	GLO
Data used	WA	WA	WA	Declared	Declared	ND	Declared	Declared	ND	ND	ND	ND	ND	ND	ND	ND
kg CO_2 e	WA	WA	WA	46917.88	0	ND	0	WA		ND	ND	ND	ND	ND	ND	ND
kg CO_2 e per unit	WA	WA	WA	2.11	0	ND	0	WA		ND	ND	ND	ND	ND	ND	ND
kg CO_2 of CH_4	WA	WA	WA	40.98	0	ND	0	WA		ND	ND	ND	ND	ND	ND	ND
kg CO_2 of N_2O	WA	WA	WA	25.91	0	ND	0	WA		ND	ND	ND	ND	ND	ND	ND

Data Key	
ND*	Not declared
WA	Where available
GLO	Global
UK	United Kingdom

unit	scope	calculation boundry
b	1	Emissions from our fork trucks & sideloaders (LPG) . Unit = per tonne (moved). The data is for the entire year of 2024
	2	Indirect emissions associated with the electricity we purchase is 0.
		We produce 50% of our operational electricity via 130 solar panels.
		The remaining power we purchase is guaranteed to be from renewable energy surces.
	3	All other indirect emissions, such as cutting fluids, packaging, staff commute, etc
c	1a	We no longer have our own trucks, but our delivery van is fully electric.
	1b	Emissions from our haulier Shepherds Distribution - we are able to provide their calculation per each consignment
		The data varies based on the weight and mileage and may be available on request.