Brooks Materials Performance Sustainability Playbook

Version 1.0

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Version Control

This version control table documents the edit history of revisions made to the Materials Sustainability Playbook.

Version Number (1.0, 1.1, 2.0, etc.)	**Modifications Made** (summary of changes)	**Date Modified** (MM/DD/YY)	**Status** (draft, final)

Contents

1. Introduction

The majority of materials used in Brooks product are made from non-renewable resources that have large environmental impact, are finite and will eventually become scarce, resulting in material availability constraints and increased costs. Further, the materials used in Brooks product account for a significant portion of Brooks' total carbon emissions and are responsible for multiple other environmental impacts including waste and chemical use. Converting to more sustainable material alternatives will address these risks, help future proof the business, and play an important role in addressing our contribution to overconsumption and climate change.

This document provides an understanding into how Brooks' Planet 2030 commitments apply to the materials used in Brooks product and outlines Brooks' policies related to more sustainable materials.

This is a "living" document and will be regularly updated; please take note of the version number and date to ensure you are referring to the most up-to-date content.

2. Planet 2030 Commitments

We know that the run offers happiness, well-being, and transformation. Running can change everything: your day, your life, and even the whole world. But to create change on a global scale, we have to do more to make those benefits accessible to all people. So, we have a simple goal:

every human who wants to run gets to run and has a place to do it.

Our Corporate Responsibility priorities set us on a path to making real and lasting progress toward this goal. A key component of our Corporate Responsibility efforts is our focus to protect the planet we run on:

This planet is our home. And because 150 million people run outside – including us – it's critical we take care of it.

Brooks' Planet 2030 strategy is guided by two priorities to address our contribution to climate change and move towards more sustainable consumption:

Climate Action: a science-based pursuit of net zero carbon emissions by 2040

Sustainable Consumption: transition to recycled or bio-based materials, eliminate manufacturing footwear material waste sent to landfill and incineration, and take responsibility for our product at its end of life

At Brooks, we aim to create running gear that lessens its impact on the planet. We take a holistic approach, managing our products' impact on the planet across its lifecycle, from raw materials all the way through to product use and end of life. We've identified key interventions to address our products' impact and have committed to minimizing our reliance on non-renewable resources by using more sustainable materials in our product, minimizing material waste generated through product manufacturing, moving toward a fully circular product model, and taking responsibility for our product after its usable life, so it doesn't end up in a landfill.

Leveraging scientific data to understand how much and by when to reduce our impact, Brooks has the following commitments to address our impact on the planet:

Sustainable Consumption:

- Source only materials with minimum 50% recycled or bio-based content by 2030
- Eliminate manufacturing footwear material waste sent to landfill, incineration, & the environment by 2025
- Launch Brooks' first fully circular performance running footwear & apparel by 2030
- Implement a product take-back program

Climate Action:

- Reduce absolute Scope 1 & 2 carbon emissions 50% by 2030 (from a 2018 baseline)
- Reduce absolute Scope 3 carbon emissions 15% by 2030 (from a 2018 baseline)
- Achieve net zero carbon emissions by 2040

3. Recycled and Bio-Based Content Materials

3.1 Context

Substituting conventional raw materials used in our product, such as polyester and Ethylene-Vinyl Acetate (EVA), to recycled and bio-based sources is critical to decouple our product from non-renewable finite resources that have a large environmental impact and will eventually become scarce, creating a risk to the future prosperity of our business.

Raw materials account for approximately 17% of our total carbon emissions, so sourcing recycled and bio-based raw materials that have lower carbon emissions will support our climate action commitment to reduce carbon emissions. Furthermore, sourcing recycled and bio-based raw materials supports our wider planet commitments, such as eliminating manufacturing footwear material waste and transitioning to circular product.

3.2 Commitment and Scope

Brooks commitment:

- Source only materials with minimum 50% recycled or bio-based content by 2030

Scope of commitment:

- This commitment applies to all materials used in Brooks footwear and apparel.
- Although Brooks' Planet 2030 commitment is to achieve a minimum 50% recycled or bio-based content, Brooks is targeting 100% recycled or bio-based content for all materials used in Brooks footwear and apparel, with the exception of the midsole, outsole, and sockliner foam materials used in Brooks footwear. Sourcing 100% recycled or bio-based content materials will support Brooks achievement of its wider Planet 2030 commitments.
- The midsole, outsole, and sockliner foam materials have the lower ambition of 50% recycled or bio-based content to ensure the performance and quality of Brooks footwear is maintained. Long-term (beyond 2030) Brooks is targeting these materials also to achieve 100% recycled or bio-based content as soon as innovation leads to performance and quality being maintained.

3.3 Roadmap

Table 1 provides a high-level roadmap on how Brooks will achieve this commitment. This roadmap is based on current understanding of available technology, commercial availability, and the ability to meet Brooks materials standards. This roadmap also allows Brooks to phase necessary projects taking into consideration teams bandwidth. This roadmap will be updated as we learn more about the factors influencing its execution.

Table 1: Footwear roadmap to achieve Brooks commitment to source only materials with minimum 50% recycled or bio-based content by 2030

	1-3 Years (S23-S25)	3-5 Years (F25-F27)	6-8 Years (S28-S30)
Upper textiles	▪ All multifilament polyester & nylon yarns converted to 100% recycled yarns ▪ All monofilament yarns converted to 100% recycled yarns ▪ All CDP polyester yarns converted to 100% recycled yarns	▪ All spandex converted to 100% recycled or bio-based yarns ▪ All hotmelt, thermoplastic (TPU, TPE), metallic yarns converted to 100% recycled yarns	▪ All yarns are recycled or bio-based

Upper foams	▪ All upper foams (e.g., tongue & collar foam, lining foams, reinforcement foams) minimum 25% recycled and/or bio-based content ▪ PU Strobel foam minimum 85% recycled and/or bio-based content	▪ All upper foams (e.g., tongue & collar foam, lining foams, reinforcement foams) minimum 50% recycled and/or bio-based content ▪ PU Strobel foam to be 100% recycled and/or bio-based content	▪ All upper foams and Strobel foams 100% recycled and/or bio-based content
Heel counter / Toe boxes	▪ All heel counters 100% recycled and/or bio-based content ▪ All toe boxes 60% recycled and/or bio-based content	▪ All toe boxes 100% recycled and/or bio-based content	
Other upper materials	▪ All PU/TPU, synthetic leathers, and hotmelt materials contain minimum 25% recycled and/or bio-based content	▪ All PU/TPU, synthetic leathers, and hotmelt materials contain minimum 50% recycled and/or bio-based content ▪ All leather converted to bio-based alternative	▪ All PU/TPU, synthetic leathers, and hotmelt materials contain minimum 100% recycled and/or bio-based content
Midsoles, outsoles and sockliner foams	▪ S23 DNA Amp midsole compound 10% bio-based content ▪ LW BioMoGo DNA and DNA Loft V1 & V2 midsole compounds 10%recycled content ▪ All 1:1 blown, HPR, and Green rubber compounds minimum 10% recycled content	All midsole, outsole and sockliner foams minimum 25% recycled and/or bio-based content	All midsole, outsole and sockliner foams minimum 50% recycled and/or bio-based content

3.4 Recycled Content

3.4.1 Definition

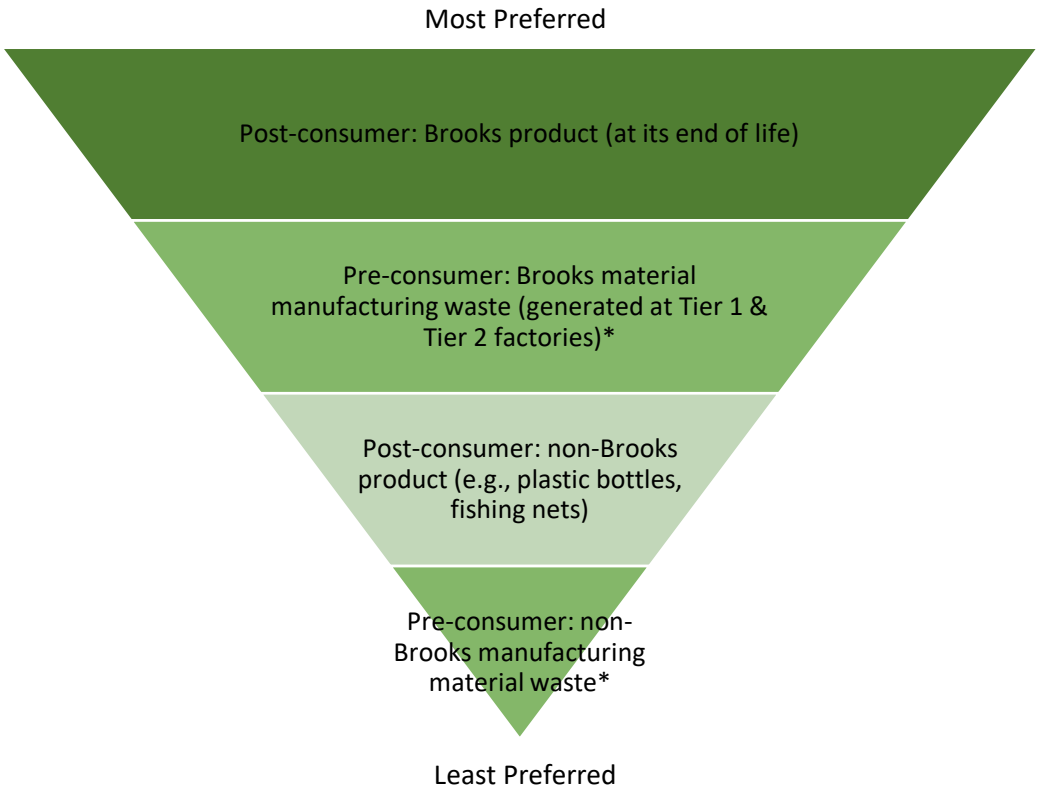
Brooks aligns with the definition of recycled content according to ISO 14021, which is used by the Global Recycled Standard (GRS), in an effort to comply with the most widely recognized and adopted definitions across the industry:

Recycled content is defined as the proportion, by mass, of recycled material in a product or packaging. Only pre-consumer and post-consumer materials shall be considered as recycled content, consistent with the following usage of terms:

> *1) Pre-consumer material: Material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.*
>
> *2) Post-consumer material: Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.*

3.4.2 Recycled content hierarchy

Brooks has adopted the following hierarchy with respect to the source of recycled content. This hierarchy supports Brooks' long-term vision to transition to a circular business model:



*Pre-consumer content generated within Brooks' Tier 2 facilities

For a material generated within Brooks' tier 2 factories to be deemed pre-consumer recycled material in that same factory, it must have undergone the complete manufacturing process and resulted in a defective material component. Material waste generated at any other stage of the Tier 2 manufacturing process cannot be claimed as a source of pre-consumer recycled content. There are two types of Brooks manufacturing material waste at our Tier 2 facilities, clarified below.

I. Brooks finished material manufacturing waste – materials that have undergone the complete manufacturing process and resulted in a finished defective material component are an acceptable source of recycled content (e.g., in a midsole and/or outsole facility, any waste generated after the crosslinking process can be claimed as recycled material, including a defective midsole/outsole)
II. Brooks material manufacturing waste due to process inefficiencies– materials that are considered scrap materials that result from inefficiencies during the virgin material creation process, e.g., uncured waste stream such as midsole runner waste and outsole scrap, and cuttings, trims, are not an acceptable source of recycled content (as aligned with the ISO definition above)

*Pre-consumer content generated outside of Brooks' Tier 2 facilities

For material waste generated outside of Brooks' Tier 2 factories to be deemed pre-consumer recycled material, it does not have to undergo a complete manufacturing process, as it will not be 'capable of being reclaimed within the same process that generated it' (as per the ISO definition). This material waste can be generated at Brooks' Tier 1 manufacturing facility, or outside of Brooks' supply chain altogether. At any stage of the manufacturing process (external, or at the Brooks Tier 1 facility) this material waste generated can be claimed and sent to Brooks' Tier 2 facility to be used as a raw material, and with that, claimed as pre-consumer recycled content.

3.4.3 Substantiating a recycled content claim

All recycled content claims must be verified. Depending on the type of material sourced, and each supplier's progress towards external verification, Brooks has different requirements to verify the recycled content claim.

Verifying recycled content in textile materials

To verify recycled content claims for textiles, Brooks uses the industry's leading recycled content standards – the Global Recycled Standard (GRS) and Recycled Content Standard (RCS). The following documentation is required to substantiate a textile recycled content claim:

a) **Scope Certificate (SC)**: Each facility that handles recycled textile must have a valid SC, certifying the facility has the appropriate procedures to manage textile with recycled content. SC will be requested by Brooks annually.

b) **Transaction Certificate (TC)**: Recycled yarns used in Brooks textiles shall be accompanied by a TC to verify the chain of custody (COC) of the source of recycled content, unless the supplier acts as the recycler of the material and is certified to perform the recycling process. Each quarter Brooks will request Tier 2 suppliers to provide TC's for all purchases of recycled yarns used to manufacture Brooks textiles.

   a. Currently, Brooks does not request the TC between the Tier 2 textile supplier and the Tier 1 final assembly facility.

c) **Yarn quantity file**: Each quarter, material suppliers will submit a completed yarn quantity file that documents recycled material types, weights, and recycling methods. This document is used to document the disclosed recycled yarn quantities used in a quarter. For recycled textiles, this document is used to conduct a mass balance calculation of the disclosed recycled yarn quantities used in a quarter against the quantities purchased in a TC.

d) **Supplier declaration:** A supplier declaration shall be submitted each quarter to certify all recycled content claims are accurate.

Verifying recycled content in non-textile materials

To verify recycled content claims for non-textile materials, Brooks accepts various third-party certifications of recycled materials. A list of accepted third-party verification bodies will be kept by the CR Team, after their approval by the Brooks legal team.

Among these are the Global Recycling Standard (GRS) and Recycled Content Standard (RCS), for which similar requirements will need to be met as with the verification of recycled content in textiles. Depending on the role of the supplier in the recycling process, these may differ slightly.

a) **Scope Certificate:**

   a. If the supplier is the actual 'recycler' of material (e.g., buying post-consumer fishing nets for processing, or recycling pre-consumer defected midsoles), their recycling process will be certified by GRS/RCS Scope Certificate
   b. The Scope Certificate should include the various materials produced for Brooks (or for a supplier downstream in our supply chain) with each material's respective recycled content percentage

b) **Transaction Certificate:** Depending on the supply chain of the material in question, a TC may or may not be required from the supplier at this time:
    a. If the supplier is the actual 'recycler' of material (e.g., buying post-consumer fishing nets), no TC is required for the purchasing of the post-consumer raw materials. The supplier of these materials is likely not associated with the industry, or with the GRS/RCS certification system.
c) **Material quantity file:** Each quarter, a material quantity file is required to show the amount of each material sold to Brooks (or downstream Brooks suppliers). Each material sold to Brooks that contains recycled content and listed on this quantity file must correspond with a material on the supplier's scope certificate
d) **Supplier declaration:** A supplier declaration shall be submitted each quarter to certify all recycled content claims are accurate.

For suppliers that use a third-party verification standard that isn't on the pre-approved list, we will require very similar documentation to GRS / RCS standards. In addition to these documents, the CR team may request a **process flow chart** to better understand the source of the recycled materials, and how these materials are used in the manufacturing process.

Brooks understands that the third-party verification of non-textile recycled materials is not as broadly scaled or required by brands as the certification of recycled material in textiles. If suppliers do not use certified recycled materials, we will work with them to obtain third-party certification in the future.

In the meantime, certain documents are required before making a recycled content claim. These documents include a **supplier declaration** (drafted by Brooks' legal team), including each material sold to Brooks, and the recycled content in each of its constituents. Also required, a file showing the source and processing of the recycled material (I.e., **process flow chart**) and a file to show the quantity of each material sold to Brooks (I.e., **material quantity file**) as laid out in the supplier declaration. Both the required contents of these documents and the timeline required for suppliers to obtain third party certification for their recycled material are to be decided by Brooks' internal legal team.

3.4.4 Substantiating a recycled source content claim

Recycled material feedstocks must be disclosed by the supplier. External sources of recycled content must be disclosed in the material quantity file. Internal sources of recycled content must be shown in a process flow chart. The supplier declaration mentioned in 3.4.3 requests this disclosure and signoff that the claim is accurate.

3.5 Bio-Based Content

3.5.1 Definition

The U.S. Department of Agriculture defines bio-based content as the amount of "new" or recent organic carbon in an object or substance, compared to the amount of "old" organic carbon it contains. It is calculated using the ratio of "new" organic carbon (plant or agricultural-based) to total organic carbon ("new" organic carbon + "old" or fossil fuel-based organic carbon). The test method ASTM D6866 is used to quantify this value.

Bio-based materials include natural fibers such as cotton and wool, and biosynthetic materials derived from renewable biological resources.

3.5.2 Source of bio-based content

Acceptable sources of biobased content include materials derived from plant biomass.

Brooks does not accept bio-based content derived from animal-by-product.

3.5.3 Climate impact of bio-based materials

All bio-based content materials considered for use in Brooks product shall be evaluated by the Brooks Corporate Responsibility team to understand its Global Warming Potential (GWP), or carbon emissions impact, compared to the current/traditional material that the bio-based content material is proposed to replace. This is necessary as some bio-based materials can have a large GWP due to a large resource use associated with raw material production compared to conventional counterparts. It's important to compare GWP of bio-based materials to other alternatives to support Brooks' climate action commitments to reduce carbon emissions.

Additionally, other environmental impact categories as measured in the MSI and LCA tools (water scarcity, eutrophication, abiotic resource depletion) will also be evaluated. If there is a high impact for any of these other environmental impact categories, compared to the conventional material, a discussion will be held to determine appropriate next steps.

Biogenic carbon refers to the carbon sequestered from the atmosphere due to biomass growth. It can be determined by radiocarbon analysis or stoichiometric analysis. It is reported in kilogram C per kilogram of material. (Higg MSI Methodology document). Brooks currently excludes biogenic carbon from our carbon emissions calculations, including both the corporate carbon emissions footprint and product and material lifecycle impact analysis (Higg MSI and GaBi). This approach is consistent with the Higg MSI methodology and is also driven by (1) Brooks has not yet understood or developed organizational boundaries for the reporting of biogenic carbon and (2) Brooks is not in a biomass-based industry, and even with using bio-based materials, biogenic carbon amounts to a very small or negligible portion of our product GHG emissions.

3.5.4 Substantiating a bio-based claim

All bio-based content claims must be verified using the latest version of the ASTM D6866 test method. The following documentation is required to substantiate a bio-based content claim:

a) **ASTM D6866 testing certificate:** Each material with a bio-based content claim shall be accompanied with an ASTM D6866 certificate to verify the bio-based carbon content percentage. The ASTM D6866 test shall be administered by a testing lab accredited to perform the ASTM D6866 test.
b) **Supplier declaration**: A supplier declaration shall be submitted to certify all bio-based content claims are accurate.

3.5.5 Substantiating a bio-based source claim

Bio-based material feedstocks must be disclosed by the supplier. The supplier declaration mentioned in 3.5.4 requests this disclosure and signoff that the claim is accurate.

3.5.6 Biodegradability

- Brooks has taken a position not to use biodegradable materials in its product.
- Although biodegradable materials can break down into smaller pieces, these smaller pieces cannot go back into the nutrient cycle (like compostable materials would).
- Further, the polymers can break down into microplastics, which in turn can leak into the environment causing further environment damage.
- Additionally, the breaking down of a material into smaller pieces has been shown to accelerate the release of methane, the most potent greenhouse gas, which is not in support of our climate action commitments.

4. Recyclable Materials

- Our target is to transition all materials to be recyclable by 2030 to support the achievement of our wider Planet 2030 commitments. An important strategy for Brooks to achieve both its sustainable consumption and climate action commitments is to source and develop materials that are recyclable – either when they become waste during manufacturing or at the end of life of the product.
- The first focus area for Brooks is to source and develop materials that if they become waste during the manufacturing process, can be recycled. Preferably they can be recycled by sending them back to our Tier 2 material suppliers and recycled into new Brooks raw materials – supporting our Recycled Content Hierarchy as outlined in section 3.4.2. If this is not possible, it's our objective that these materials can be recycled outside of the Brooks manufacturing supply chain and/or in other industries.
- The second focus area considers materials that can be recycled at the product's end of life. Through our product takeback program, we aim to disassemble our product into usable raw materials for recycling into new Brooks materials. If this is not possible, it's our objective that these materials can be recycled or downcycled in other applications or industries. This focus area will depend on the technology available to develop these recyclable materials and the technology available to disassemble our non-circular product.

5. Material Sustainability Policies

5.1 Animal Derived Materials Policy

At Brooks, we believe in treating animals with care and respect. Brooks' animal derived materials policy ensures the animals ethical treatment and welfare.

Brooks does not accept animal testing at any stage of Brooks material and product production.

5.1.1 Leather policy

- Leather used in Brooks product shall not originate from deforested or converted lands in the Brazilian Amazon Biome, Eastern Paraguay, Colombia, or Indonesia in accordance with Leather Impact Accelerator Deforestation Conversion Free (DCF) protocol.
- Suppliers must provide farm, slaughterhouse and tanning facility location information. This may take the form of an animal transfer (GTA) paperwork to show farm location, or a comprehensive list of the location of farms that serve the nominated slaughterhouses.
- All leather materials used in Brooks product must be sourced from a Leather Working Group (LWG) Gold certified tannery and have an LWG traceability rating. Suppliers must provide documentation in the form of valid LWG certification.
- We use very little leather but recognize the impact this material type has both on the planet and on animal welfare. We are committed to stop using leather materials derived from animals by 2025 and are working towards a bio-based leather alternative to replace the use of animal leather in Brooks product.

5.1.2 Wool policy

- All wool must be non-mulesed.
- Currently, we use very little wool but recognize the impact this material type has both on the planet and on animal welfare. We are working toward sourcing only Responsible Wool Standard (RWS) certified wool by 2025.

5.2 Forest Derived Materials Policy

- Brooks' forest derived materials policy aims to prevent any contribution to deforestation and forest habitat.
- Forest derived materials used in Brooks product, including Man Made Cellulosic Fibers (MMCFS) (e.g., viscose, lyocell, modal, rayon), shall be sourced only from sustainably managed forests.
- Brooks defines sustainably managed forests as forests that are certified to either the Forest Stewardship Council (FSC) or the Program for the Endorsement of Forest Certification (PEFC) standards.
- Suppliers of forest derived materials used in Brooks product, not including packaging, must provide a valid FSC or PEFC certification and full chain of custody (COC) to verify the certified material has been identified and accounted for along the entire value chain – from forest to final material manufacturing facility.
- **Responsibly Produced MMCFs:** Brooks recognizes the large environmental impact of processing MMCFs and is committed to only source MMCFs that are responsibly produced. Brooks defines responsibly produced MMCFs as MMCFs from Lenzing and BIRLA suppliers. These suppliers have proven to implement responsible manufacturing processes that lessen the impact on the environment. This is validated by the lower impact calculated in the Higg MSI for these suppliers' MMCF materials.

5.3 Cotton Policy

5.3.1 Cotton sourcing

- All cotton used in Brooks product must be ethically sourced from countries that do not have known human rights labor issues.
- Brooks does not accept any cotton originating from Turkmenistan due to severe human rights concerns.
- Brooks cotton suppliers must demonstrate full transparency in their supply chain, from the farm to the final manufacturing facility.

5.3.2 Preferred cotton

- Due to the high environmental impact of cotton, Brooks aims to transition to source only organic or recycled cotton.
- To verify organic cotton claims, Brooks has aligned with the Global Organic Textile Standard (GOTS), the leading textile processing standard for organic fibers, including ecological and social criteria, backed up by independent certification of the entire textile supply chain.
- All suppliers providing organic cotton must meet GOTS requirements.
- Recycled cotton claims shall be verified by the Global Recycled Standard (GRS) or the Recycled Content Standard (RCS) and meet the same requirement outlined in 3.4.3 for Scope Certificate and Transaction Certificates.

5.4 Restricted Substances

- All materials used in Brooks product must comply with the Brooks Restricted Substances List (RSL).
- The Brooks Responsible Chemicals Program and RSL outlines all requirements to ensure factories manufacturing Brooks product and materials use only chemicals that are safe for people and the planet.

5.5 Durable Water Repellents / Non-Wicking Treatments

- All Durable Water Repellent (DWR) and non-wicking treatments used on Brooks materials are prohibited from using C6 technology.
- Brooks is committed to using only non-fluorinated (C0) DWR and non-wicking treatment by S23 footwear product, and F24 for apparel product.
- All DWR and non-wicking treatments shall be supported with a signed declaration that discloses the DWR type (e.g., C0). Brooks will send the *DWR Declaration Form* to all suppliers who are manufacturing materials with a DWR/non-wicking treatment claim. Suppliers must complete form and submit to Brooks.

5.6 Packaging

- We aim for all paper, paperboard, and cardboard materials used in Brooks footwear and apparel packaging to have 100% recycled content, be recyclable, and be FSC or PEFC certified. This includes both product packaging and inbound and outbound shipping packaging.
- Brooks apparel polybag packaging materials shall work towards 100% recycled or bio-based content and be recyclable or compostable.

6. Manufacturing Footwear Material Waste

6.1 Context

The creation of material waste during footwear manufacturing increases the overall environmental impact of our product – increasing carbon emissions, creating further environmental impact during its disposal, and increasing material costs. By reducing material waste and developing sustainable solutions for unavoidable material waste, we can lower our products' overall environmental impact, reduce carbon emissions, and support our transition to a circular future where all waste is treated as a valuable resource.

6.2 Commitment and Scope

Brooks commitment:

- Eliminate manufacturing footwear material waste sent to landfill, incineration, and the environment by 2025

Scope of commitment:

- This commitment applies to all Brooks footwear material waste created during manufacturing at Tier 1 final assembly (and their subcontractors) and Tier 2 material manufacturing factories.

6.3 Strategies

Two key strategies have been identified to achieve our commitment to eliminate manufacturing material waste to landfill and incineration:

- **Maximize material usage (material efficiency):** Our approach is to first minimize the amount of material waste generated during manufacturing. We have identified a series of initiatives across design, materials, and manufacturing to maximize material usage, including exploring new cutting solutions and implementing new pattern software for more efficient nesting. We will also stay focused on reducing defects. Additional strategies will be identified through the analysis of our waste footprint to understand the root cause of the waste.
- **Recycle unavoidable waste:** For any material that does find its way to the factory floor, we will partner with our factories and take action to ensure that material does not end up in landfill, incineration, or the environment. Our long-term vision is to recycle material waste back into the Brooks manufacturing supply chain and use it as the source of recycled content to make new Brooks material.
- **Dematerialization:** see section 8.6

6.4 Material Efficiency

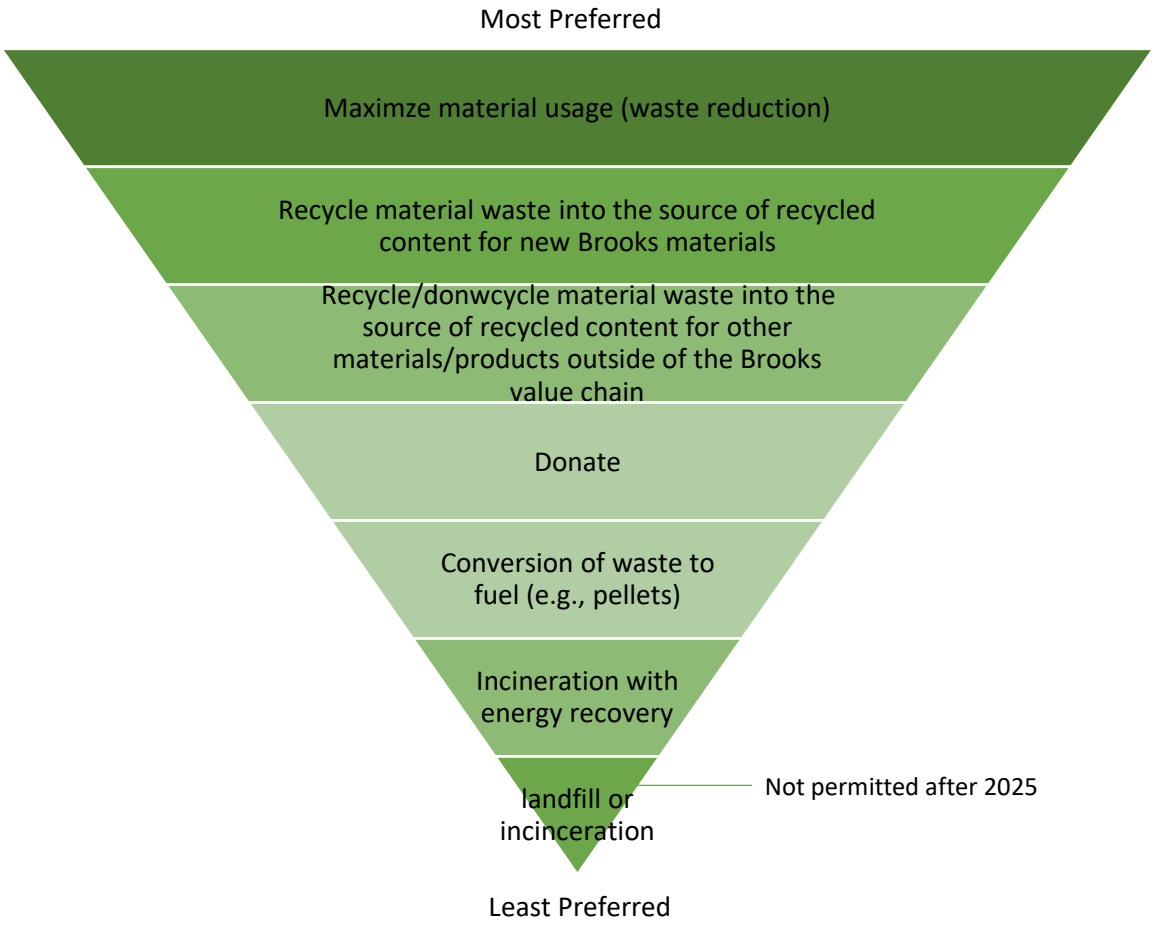
- At Brooks, we measure material usage using a metric called material efficiency.
- Material efficiency is a metric of how much material is used for a product component (component weight) as a percentage of total material purchased or is needed to produce that component (component weight + waste material).
- For materials that are cut at the tier 1 level, material efficiency is measured through the Pattern Efficiency metric. This is calculated by our tier 1 suppliers and our costing team. It's a metric that shows the amount of material that ends up in the actual product, as a percentage of the amount of material purchased. The term pattern efficiency is predominantly used in footwear, while the term 'marker efficiency' is used in apparel.
- For materials that are molded or cut at the tier 2 level, material efficiency is measured at the Tier 2 production level and is calculated as the percentage of raw material weight that ends up in the final component.
- Since the material efficiency metric calculates the amount of material that ends up in a finished product, it also calculates the amount of material that ends up as waste. This metric is calculated across materials and added

together. This way we can understand the waste material generated per product (or 'grams of material waste per pair', in footwear).

- The amount of waste material per product allows us to learn what material is generating the most waste, and it will allow us to calculate carbon emissions resulting from the material waste. Both insights help us understand where to focus our efforts with regards to increasing the material efficiency of the components, and to reduce carbon emissions.
- There is no corporate target for material efficiency. Materials/components in our product have a vast range of efficiencies, which are often not comparable. Instead, the metric is used to inform strategies to achieve other targets:
  1. Reduce carbon emissions by improving the efficiency of the most carbon intensive materials
  2. Reduce the amount of waste generated by improving efficiency of materials that generate more waste (by weight)
  3. Eliminate material waste sent to landfill or incineration by improving efficiency of materials that cannot easily be recycled, or for which there is no alternative end of life scenario.

6.5 Hierarchy for Responsibly Managing Material Waste

If material waste is generated during manufacturing, the following hierarchy shall be adopted to understand Brooks' priority to responsibly manage material waste, towards achieving our zero waste to landfill and incineration commitment.



In addition to this hierarchy, we will prioritize the solution with the lower environmental impact, specifically as it relates to carbon.

7. Circular Product

7.1 Context

Brooks currently operates a linear business model in which non-renewable resources are extracted, materials manufactured, our product assembled, consumers then use our product, after which, there is no end of life solution, and it ultimately ends up in landfill or incineration. This linear model poses risk to the long-term viability of the business as non-renewable resources become scarce, cost of materials increase, and consumer expectations grow.

Circular product is the notion of manufacturing product that can be deconstructed and using materials that can be fed back into the product cycle, time and time again. Moving away from linear towards circular product will be necessary to address Brooks' contribution to overconsumption and future proof the business, as well as help bring new innovations and business opportunities to the brand.

7.2 Commitment and Scope

Brooks commitment:

- Launch Brooks' first fully circular performance running footwear and apparel by 2030

Scope of commitment:

- This commitment applies only to one footwear and one apparel style
- The target is not to transition all Brooks footwear and apparel to circular product by 2030
- But long-term (beyond 2030), Brooks' vision is to transition its entire product portfolio to circular product

7.3 Circular Product Definition

- The ultimate vision for a circular Brooks product is a product that is designed, developed, and manufactured such that after consumer use, it can be returned, deconstructed, and all components and materials recycled as new raw materials that are used to make a new Brooks performance running product, which can then again be recycled after its use.
- However, Brooks recognizes that (1) the increasing number of times a material is recycled may result in lower material performance and quality, and that (2) not all components recovered from the original product will be able to serve the same function in a new product.
- It may occur that components and materials can be recovered at the end of life but cannot be processed and serve as raw materials for a new Brooks circular product; these recovered materials should serve as raw materials in other Brooks product, which may not be circular. This also allows the material in the original product to serve a different purpose or as a different component in the new Brooks product. In this case, the original product will still be considered circular and fulfill Brooks' target of circular performance running products by 2030.
- In this scenario, when a material from the original product cannot be recycled into the new, also circular, product, it needs to be replaced by a material that was not in the original circular product. This material in the new Brooks circular product must be substituted with recycled or bio-based sources from (1) other Brooks products or (2) third party sources, verified according to GRS or ASTM standards. In both cases, the new Brooks product will be considered circular and fulfill Brooks' target of circular performance running products by 2030.

Clarification on 2026 circular footwear product

- The vision for Brooks is to bring to market a first version of circular footwear product in 2026, that after consumer use and recovery, can be deconstructed and its raw materials recycled into the Brooks circular footwear product to launch in 2030.
- The 2026 circular shoe will have the same end of life requirements as the 2030 circular product, but since it is the first iteration of circularity for Brooks, its raw material composition will likely not consist of materials recycled from Brooks product. This 2026 circular prototype product should contain as much recycled and/or bio-based material as possible.
- If needed, virgin content may be used in this product keeping in mind that (1) the recyclability of its materials and use in future Brooks circular product is the priority and (2) select recycled or bio-based components may not be available at this time.

Summary of requirements for circular footwear product:

	2026 circular footwear product	2030 circular footwear product
All raw materials recycled or bio-based	No – although aim to maximize use of recycled and/or bio-based materials	Yes
Source of raw material recycled content is from Brooks circular footwear product	No	Yes - but recognize some new raw material input may be needed. If so, it shall be recycled or bio-based and be recyclable after consumer use
Raw materials must be recyclable after consumer use	Yes - and should be able to be recycled into circular footwear product. If cannot be recycled into circular footwear it should have ability to be recycled into other materials/components used in non-circular footwear product	Yes - and should be able to be recycled into circular footwear product. If cannot be recycled into circular footwear it should have ability to be recycled into other materials/components used in non-circular footwear product

Clarification on adhesives with regards to circular product

- Adhesives play an important role in current Brooks product, as we anticipate they will in any circular product
- The circularity of Brooks product currently applies to our raw materials. The state of innovation with regards to recyclability or reuse of adhesives is currently not clear. Therefore, adhesives are currently out of scope for recovery and recycling. However, all adhesives still need to be sourced as 100% water-based.
- Our Innovation and CR teams will work to better understand the status of recyclability of adhesives and when possible, we will incorporate this initiative into our model. However, the recycling of adhesives in our product is not a requirement for Brooks to consider it circular.
- Our product teams will be discovering how using adhesives affects the capability for our product to achieve full circularity. More research will be conducted to learn about the impact of adhesives on the ability to disassemble and recycle footwear components, and the potential to design adhesives out of our product.

8. Climate Action

8.1 Context

Materials used in Brooks product account for over 45% of Brooks total scope 3 carbon emissions. Raw materials (Tier 4) account for approximately 17% of our total carbon emissions, and raw material processing into a finished material (Tier 2 and 3) accounts for 28% of total scope 3 carbon emissions. Strategies to reduce carbon emissions of raw materials and material processing are therefore critical for Brooks to achieve its carbon emissions reduction commitments.

8.2 Commitment and Scope

Brooks commitment:

- Reduce absolute scope 3 carbon emission 15% by 2030 (from a 2018 baseline)

Scope of commitment:

- This commitment applies to all of Brooks' scope 3 carbon emissions

8.3 Strategies

To achieve Brooks' climate action commitments, we have identified several strategies that will lead to carbon emissions reductions. Many of these strategies relate to the materials used in Brooks product, given their large contribution to our total scope 3 carbon emissions. The following material-related climate action strategies are critical to Brooks achieving its scope 3 carbon reduction goal and net zero commitment and are further explained in this section:

- Convert to recycled & bio-based content materials (see section 3)
- Use low impact dyeing process for textiles
- Material weight reduction
- Maximize material usage (material efficiency)
- Renewable energy and energy efficiency
- Transition to circular product (see Section 6)

8.4 Low Impact Dyeing

- Brooks is targeting to transition all textile materials used in Brooks product to be dyed using a low impact dyeing process by 2030.
- This target applies to all textiles used in Brooks product.
- Brooks defines low impact dyeing process as:
    - Dope dyeing (solution dyeing)
    - CO2 critical dyeing
    - Priint dyeing
- This list will be updated as more low impact dyeing process technologies are developed and commercialized.
- **Roadmap**: The following high-level footwear roadmap outlines the milestones to achieving the 2030 target:

	1-3 Years (S23-S25)	**3-5 Years (F25-F27)**	**6-8 Years (S28-S30)**

Low impact dyeing	▪ All sockliner top cloths dope dyed ▪ All textile lining materials dope dyed ▪ Upper single material textiles CO2 dyed	▪ Introduce low impact dyed/printed vamp materials ▪ All other reinforcement textiles low impact dyed/printed ▪ All woven & lace materials low impact dyed/printed ▪ All non-woven materials low impact dyed/printed	▪ All vamp materials low impact dyed/printed ▪ All tape materials low impact dyed/printed

This roadmap will be updated as we learn more about the factors influencing its execution.

8.5 Material Weight Reduction

- Reducing the standard material weight of materials used in Brooks product has been identified as a key strategy to help achieve Brooks' scope 3 carbon emissions reduction commitment.
- The calculation of a material's carbon emissions uses a weight-based factor (called an Emissions Factor (EF)) and therefore, the lower the standard material weight of a material the lower the carbon emissions per kg of material used.
- Brooks product development teams are encouraged to source, develop, and innovate towards materials that have a lower standard material weight.

8.6 Dematerialization

- The concept of dematerialization refers to a reduction in the quantity of materials required to serve a function. Dematerialization decouples value creation from raw material resource extraction to create new products, eliminating the need for new materials in our product. This reduction of the volume of material and energy used to produce Brooks product therefore diminishes the environmental impact of Brooks product and can provide carbon emissions reduction benefits. Additionally, dematerialization also streamlines the manufacturing process, which in turn reduces carbon emissions associated with those processes, I.e., screenprinting processes involved with overlays are eliminated when there is no need for the overlay material.

8.7 Maximize Material Usage (Material Efficiency)

- Brooks' product carbon footprint is measured according to the total weight of the material that is needed to manufacture a component or product. This includes material that ends up in the final product and material that ends up on the factory floor as waste.
- As material efficiency increases, the amount of material needed to manufacture the same component or product decreases, and so does the carbon footprint of our materials and products.
- Maximizing material usage (increasing material efficiency/pattern efficiency) will help to lower carbon emissions because Brooks accounts for the carbon emissions associated with material waste generated during product final assembly. Additionally, material waste creates additional carbon emissions from its impact of final disposal at landfill or incineration.

8.8 Renewable Energy and Energy Efficiency

- Brooks is targeting all Tier 1 final assembly factories and high-volume Tier 2 factories to use 100% renewable energy by 2025 and 2027 respectively.
- Brooks product development and sourcing teams shall use renewable energy as a filter when evaluating new Tier 1 and Tier 2 suppliers.

9. Higg Product Tools and Life Cycle Assessments

9.1 Context

- The Higg Index is a suite of tools created by the Sustainable Apparel Coalition (SAC) to standardize measurement of value chain environmental and social impact and performance.
- Brooks has adopted each of the five Higg Index tools:
    - Higg Brand & Retail Module (Higg BRM)
    - Higg Facility Social & Labor Module (Higg FSLM)
    - Higg Facility Environmental Module (Higg FEM)
    - Higg Materials Sustainability Index (Higg MSI)
    - Higg Product Module (Higg PM)
- Brooks has adopted each of these tools to:
    - improve the understanding of our environmental and social impact,
    - provide a framework to improve environmental and social performance, and
    - standardize measurement to enable industry benchmarking
- The Higg Product Tools are life cycle assessment tools that give insight into environmental impacts of materials and products.

9.2 Higg Materials Sustainability Index (MSI)

- The Higg Material Sustainability Index (Higg MSI) is a platform that allows us to better understand the impact our materials have on the environment, both from a raw material (Tier 4) and processing (Tiers 2 & 3) standpoint.
- The Higg MSI allows for companies in the apparel and footwear industry to customize their materials according to raw material and manufacturing processes used to manufacture the final material, to better understand their environmental impact.
- For instance, for a textile, the MSI specifies the composition (blend), raw material type (fossil-fuel based, recycled, bio-based, etc.), yarn formation (spinning and extrusion), textile formation (knitting and weaving), dyeing process (conventional, batch, solution, etc.) and finishing processes (heat setting, scouring, etc.).
- With the custom selection of each of these attributes, the Higg MSI generates a specific factor (midpoint and MSI score) for the following environmental life cycle impacts: global warming potential, eutrophication, water scarcity, fossil fuel resource depletion and chemistry use.
- Before entering material-specific information into the Higg MSI, multiple data points are required for each material. The Brooks CR team collects this information from our material suppliers through custom templates, specific to each material type. Templates are customized so that each entry determines which variables are selected for each material attribute, and therefore the most accurate life cycle impact factors are generated.
- Brooks enters each material used in Brooks footwear and apparel into the Higg MSI. This helps us understand which material better aligns with our Planet 2030 commitments and allows us to track the progress we are making to these commitments. If suppliers provide incomplete information or do not return a completed form, Higg MSI defaults are used for each raw material and / or process.
- Additionally, entering our materials into the Higg MSI provides us with a more accurate Emissions Factor (EF) for global warming potential (GWP) for each material used in Brooks product improving the accuracy of our corporate Scope 3 carbon emissions reporting.
- Entering materials into the Higg MSI is also a prerequisite to use the Higg PM.

9.3 Higg Product Module (PM)

- The Higg Product Module (Higg PM) measures cradle-to-grave environmental impacts of a product from the point of resource extraction to manufacturing impacts, all the way through product durability, care, and end of use.
- The following life cycle stages are considered in the Higg PM: bill of materials (calculates Tier 4 → Tier 2 impacts, according to materials pulled in from the Higg MSI), finished goods manufacturing (Tier 1), packaging, logistics / transportation (including inbound – from manufacturing to distribution center and, outbound – from the distribution center to retail or the consumer), retail (distribution centers and retail space), product care, end of use and duration of service.
- The final life cycle impacts (LCI) are the same as with the Higg MSI: global warming potential, eutrophication, water scarcity, fossil fuel resource depletion and chemistry use. The global warming potential is of particular interest as it provides a GHG footprint (in kgs of CO2eq) per product.
- Brooks evaluates each new footwear and apparel style in the Higg PM to identify opportunities for improvement, understand our products' holistic sustainability performance, calculate the per pair/unit carbon emissions, and to benchmark impact/performance to similar products within the industry.

9.4 LCA

- In addition to Higg MSI and Higg PM we also conduct life cycle assessments (LCA) for certain footwear styles, materials, and manufacturing processes to help with custom evaluation of materials and processes where we are unable to use Higg product tools to analyze due to a lack of available data. This occurs often when we are developing new raw materials or manufacturing processes.
- At Brooks we use GaBi software, a full lifecycle tool, and their accompanying database, both provided by Sphera. Our current choice is not to use SimaPro software or EcoInvent data, mostly to align closely with the Sustainable Apparel Coalition and Higg, who have based their entire system on GaBi software and data.
- **How do we decide if we need to conduct an LCA study?**
    - If an industry standard LCIA impact is available (i.e., through the Higg MSI) for a new material process, we will prioritize this dataset for the following reasons: (1) we have confidence in Higg and Sphera's relationship and expertise and (2) we're confident this dataset can be accurately compared with current data in the Higg MSI, which is widely used across our systems.
    - As new materials, manufacturing processes and products (including circular models) are used, and they are not yet represented in the Higg product modules (or we have concerns with Higg data) we can help assess the environmental footprint of these initiatives through the use of GaBi by conducting an LCA modeling exercise.
    - If new materials or processes occur, we may ask suppliers to work with Higg to enter their materials and / or processes into the Higg tools. This is also where GaBi can provide high level directional data for us to evaluate this material or process.
    - If there is no industry standard available, the CR team will perform third-party research to directionally determine the carbon impact of materials. This is where externally performed LCAs can be of value. However, LCIA impacts from these LCAs should not be used as we calculate outward facing KPIs or track progress to our Planet 2030 commitments.
- **What data is needed for an LCA study?**
    - The data needed to perform an LCA generally considers all inputs and outputs needed to perform a specific process. Inputs include raw materials, natural resources (e.g., water), energy sources (e.g., electricity, gas, coal) and outputs include product, waste, wastewater and emissions to air and water

- For a life cycle impact assessment for a specific process, inputs and outputs for that process are required. An LCA for an entire product requires inputs and outputs, for all lifecycle stages (cradle to grave).
- Determining life cycle impacts for a raw material is likely not possible to perform in house, as suppliers often use proprietary inputs in order to produce their products.

- **How do we get this data for new projects?**
  - At the time of completion of the Ghost 15 LCA and the modeling of the Loft V3 & V4 midsole processes, the CR team developed a 'Brooks – Lifecycle data collection sheet' that should be modified according to each supplier that will complete it (e.g., midsole manufacturers, textile processors, etc.)