

Draft GTIN Management Standard for Construction Products

Preface [Not intended to go into the final standard]

This is the fourth draft of a suggestion to potential future GTIN Management Standard for Construction Products. It is the result of the work being done in the subgroup for GTIN Management Rules under the Swedish GS1 User Group Construction. A lot of stuff has been shamelessly copied from the current general GTIN Management Standard available at this website:

<http://www.gs1.org/1/gtinrules/> It has then been adopted to the construction product context. The other primary source has been the input from the members of said subgroup. The document is primarily intended as a starting point for discussions. Feedback is very welcome!

Please note that although the text from page three and on reads like it is a proper GS1 Standard, developed through the GS1 Global Standards Management Process (GSMP), this is just a draft and a suggestion for how such a standard could look like.

Best regards,
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Revision history

- 4.2 Corrected an error under 2.7.4: The answer to “Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?” should be YES, not NO as it read pre version 4.2.
- 4.1 Updated the contributor list.
- 4.0 Added this preface text.
- 3.0 Original final draft.

The text of the actual draft (starting with the Table of Content) has been the same since draft 3. In draft 4 this preface text was updated and in draft 4.1 the list of contributors was updated.

Notes from the first draft feedback

The work in the Swedish GS1 User Group Construction was triggered by a decision in 2018 by several large Swedish construction industry stakeholders to use and require GTINs on construction products. It is important to remember that this decision, to use GTIN as a standard item identifier, was based on the need to be able to track a construction product, its content, data and properties, throughout its entire lifecycle.

GTIN is the key to the information about the product and its data. It is crucial that the information, data and properties of a specific construction product, which is identified with its GTIN, is declared, structured and formatted in a standardized way, for example in a globally standardized Data Template.

It is also important to remember that it is not only the change in the content of the Data Sheet that triggers a changed GTIN. It can also be the “Declared net content”, “Dimensional or gross weight change” or even “Price on package”.

In parallel with the work with GTIN Management Rules, GLN, Data Templates etc. there is also a need to discuss how we get the manufacturers to set and communicate GTIN on all their construction products, and that these can be registered in different databases easily and cost-effectively.

If this GTIN Management Standard is followed there will be a need to define mechanisms to indicate a trade item’s status like new, active, and discontinued. There will also be a need for a standardized way to indicate possible replacements for discontinued items like “no replacement”, “direct replacement”, and “recommended replacement” as well as versions. This is outside the scope of this specific standard, but it is none the less a requirement for an efficient information flow.

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1 Introduction

The Global Trade Item Number Management Standard for Construction Products is a construction industry specific adoption of the general Global Trade Item Number Management Standard. While there are many similarities between the two, there are also several important differences.

The Global Trade Item Number (GTIN) has traditionally provided a global supply chain solution that enables identification of any trade item that may be priced, ordered, or invoiced at any point in the supply chain upon which there is a need to retrieve pre-defined information. Although this is also applicable to construction products, there are additional needs for identification of that group of trade items.

Construction products typically has a significantly longer life span than most other trade items. Since some of them can be in active use for 50 or even 100 years, a lot of external factors that might influence the usage as well as value of that product will change while it still is in active use. Examples of such factors are construction methods, regulations, and knowledge about different material's properties in both the short and the long term. To building owners and facility managers, the challenge of knowing what is in a building has always been there, but the rapid development of new materials combined with the increased focus on sustainability and circularity has accentuated these stakeholder's need to efficiently track construction products, and their properties and content, throughout their complete lifecycle. To facilitate that, the scope of the GTIN has here been extended beyond the traditional supply chain, to also include things like maintenance, repair, upgrade, reuse, and recycling.

The Global Trade Item Number (GTIN) Management Standard for Construction Products is designed to help industry make consistent decisions about the unique identification of trade items in open supply chains. This standard has been developed in accordance with the GS1 Global Standards Management Process (GSMP) and is considered a part of the GS1 system of standards. Overall, costs are minimised when all stakeholders throughout a products lifecycle adhere to the GTIN Management Standard for Construction Products.

Unique identification of trade items is critical to maintaining operational efficiencies that stakeholders rely on to exchange information about products in consistent ways, as well as ensuring the smooth operations of global supply chains. Additionally, the unique identification of trade items is crucial when complying with various regulations across the globe. Finally, unique identification as well as communication between trading partners of those changes are essential to ensure the right product is made available on the store shelf or directly to the end user.

1.1 Product vs. instance

For specific situations within facility management there is also a need to keep track of the specific instances of products, e.g. a specific ventilation damper instead of all dampers of a specific make and model, which a GTIN will not solve. However, the GS1 Global Individual Asset Identifier (GIAI), or a GTIN + serial number, is addressing this need while GTINs managed according to the GTIN Management Standard for Construction Products will work for tracking the big majority of construction products that do not need to be tracked on instance level. If there is a need to track on a batch level a GTIN + batch/lot number could be used.

1.2 Guiding principles/Business objectives of changing a GTIN

The GTIN Management Standard for Construction Products provides an industry standard to create practical business and end user value, specifically when pre-defined information changes on an existing product or when a new product is introduced for the first time. The following guiding

principles should be considered by any brand owner when introducing changes to an existing product and also when developing a GTIN assignment strategy for a new product.

1. Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?
2. Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?
3. Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?
4. Is there a substantial impact on maintenance, next use, recovery, or decommissioning?

At least one of the guiding principles must apply for a GTIN change to be required.

1.3 Defining a new product compared to a product change

When making decisions about product identification, it is important to understand the differences between a NEW product and changes to an existing product.

New products are those which do not currently exist in a brand owner's product offering and are new to the marketplace. A new product should be considered an "addition" to a product offering. The GTIN Management Standard requires that if a product is new, it should always be assigned a new GTIN to accurately distinguish the new product from any existing product, which is a product that is currently available in the marketplace.

Changes to existing products are considered "replacement products" (the previous version will no longer exist once the replacement product has flowed through, as determined by the brand owner). The GTIN Management Standard defines when a change to certain attributes of an existing product is such that a new GTIN is required.

- **New product:** A "new product" is defined as a product that does not currently exist or has not been available for sale and is an addition to the brand owner's portfolio/is new to the marketplace.
- **Product Change:** An existing product, currently in the brand owner's portfolio and available in the marketplace whose attributes have been changed.

1.4 GS1 standards and legal/regulatory compliance

The GTIN Management Standard represents a minimum requirement. Please be advised that there may be regulation(s) in your market area that are more stringent and SHALL be adhered to. All local legal and regulatory requirements supersede the GTIN Management Standard.

1.5 GTIN Management Standard and brand owner discretion

The GTIN Management Standard represents the minimum GTIN changes that industry has decided upon. Brand owners may change the GTIN as often as they think is appropriate based upon their needs as well as the needs of their consumers and trading partners, considering the guiding principles defined in section 1.1.

2 GTIN Management Rules for Construction Products

Below are the details that define when a GTIN MUST be newly assigned (NEW PRODUCT) or changed (REPLACEMENT PRODUCT) to be in conformance with the GTIN Management Standard for Construction Products.

The GTIN Management rules define when GTIN changes are needed at the end user trade item level (base unit) as well as on higher level trade items (e.g., case, pallet) that currently exist and are used in distribution processes. To enable traceability after an item has reached the end user, it is the base level/base unit that is the primary concern, since it will be on that level it will link to the information about the product. This is primarily valid for 2.1 and 2.2.

Remember that all the GTIN Management rules need to be considered when making the final decision of whether or not to change a GTIN.

2.1 New product introduction

A "new product" is defined as a product that does not currently exist or has not been available for sale and is an addition to the brand owner's portfolio/is new to the marketplace.

Any new product requires the assignment of a new GTIN.

2.1.1 Hierarchy levels of GTIN assignment

- The GTIN is assigned at the retail consumer trade item or base unit level.
- A unique GTIN is assigned at every level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	New GTIN for retail consumer trade item or base unit level?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
New product introduction	YES	YES

2.1.2 Example business scenarios that require GTIN assignment

- A construction product which never has been on the market before.
- A wooden cornice with a new profile.
- An insulation board with lower thermal conductivity.
- An electric screwdriver with higher maximum torque.
- A glue with shorter fixation time.
- A paint that is a whiter shade of pale.
- A ready-made window/door etc. with its specification of contents and properties.
- A prefabricated concrete element etc. with its specification of content and properties.

2.1.3 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?

New product introduction	YES	YES	YES	YES
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2.2 Declared formulation or functionality

“Functionality” is defined as the particular use or set of uses for which something is designed.

“Formulation” is defined as a list of the ingredients or components used to create a trade item.

A change to the formulation or functionality where the brand owner expects the consumer, supply chain partner or those involved in next use or recovery to distinguish the difference requires a new GTIN.

2.2.1 Hierarchy level of GTIN change

- The GTIN change must occur at the retail consumer trade item/base unit level.
- A unique GTIN is assigned at every existing level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	GTIN change for retail consumer trade item/base unit?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
Declared formulation or functionality	YES	YES

2.2.2 Example business scenarios that require GTIN change

- A product previously covered by a national standard is now covered by an EU harmonised standard, i.e. it is now required to be CE marked and have a Declaration of Performance.
- The appearance grading of a softwood product is changed from G4-2 to G4-3.
- The chemical content of a product is deliberately changed (not just through daily fluctuations in the production process).
- A product painted white is still painted white but with another paint.
- The solution or method used for impregnating a wood product is changed.
- The type of battery in an electric screwdriver is changed.
- An insulation board changes dimensions.
- A plasterboard with changed density for extended application/function.
- Other hinges on window/door.

2.2.3 Additional information

- New GTIN assignment is NOT required when declaring existing functionality that was previously present, but not declared on the package, and is now being marketed on new packaging.
- Local, national, or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

2.2.4 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?
Declared formulation or functionality	YES	YES	YES	YES

2.3 Declared net content

“Net Content” is defined as the amount of the consumable product of the trade item contained in a package, as declared on the label, which may include net weight, volume, count, units, etc.

Any change (increase or decrease) to the declared net content that is printed on the pack, requires assignment of a new GTIN.

2.3.1 Hierarchy level of GTIN change

- The GTIN change occurs at the retail consumer trade item or base unit level.
- A unique GTIN is assigned at every existing level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	GTIN change for retail consumer trade item/base unit?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
Declared net content	YES	YES

2.3.2 Example business scenarios that require GTIN change

- The declared length of a wooden beam changes.
- The declared net weight of a tube of sealant increases from 680 g (24 oz) to 794 g (28 oz).
- The declared number of plasterboards in a package change from 8 to 10.
- The declared number of bricks on a pallet is changed.

2.3.3 Additional information

- The requirement does not include any marketing declarations or suggestions that are for the consumer’s knowledge, but not directly related to pricing, brand, government regulations. For example: recommended application amount of a paint per square metre.
- Declared net content is what is used to develop shelf labelling and price per unit declared to the consumer. Accuracy and synchronisation are essential and failure to comply may result in a penalty.
- Local, national, or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

2.3.4 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?
Declared net content	YES	YES	YES	NO

2.4 Dimensional or gross weight change

A change of over 20% to a physical dimension, on any axis, or gross weight, requires assignment of a new GTIN.

2.4.1 Hierarchy level of GTIN change

- The GTIN change occurs at the retail consumer trade item or base unit level.
- A unique GTIN is assigned at every existing level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	GTIN change for retail consumer trade item/base unit?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
Dimensional or gross weight change	YES	YES

2.4.2 Example business scenarios that require GTIN change

- The size of a pack of glass wool insulation is reduced due to compression packing.
- The gross weight of a product increases by 50% from 0.34 kg (0.75 lb) to 0.68 kg (1.5 lb) due to a change in the packaging material from plastic to wood crate.
- The height of a box of nails changes by 40% from 7.6 cm (3 in) to 10.64 cm (4.2 in).
- A case or pallet orientation (there is no change to the item inside) may be changed such that one or more axis changes.

2.4.3 Additional information

- This part of the standard only applies to changes to the dimensions and the gross weight of a product. Any change to declared net content is governed by the rule on “Declared Net Content”.
- Frequent cumulative changes, without changing the GTIN, in avoidance of the 20% rule is an unacceptable practice. Trading partners should be notified about all dimensional changes. Cumulative changes might cause problems for trading partners and may obstruct the flow through of product.
- See the GS1 GDSN Package Measurement Rules for a consistent, repeatable process to determine measurements for a given product package
- Local, national, or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

2.4.4 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?
Dimensional or gross weight change	YES	NO	YES	NO

2.5 Add or remove certification mark

A change to packaging to add a new, or remove an existing certification mark (e.g., EU Ecolabel, FSC or PEFC) that has significance to regulatory bodies, trading partners or to the end consumer, requires assignment of a new GTIN.

2.5.1 Hierarchy level of GTIN change

- The GTIN change occurs at the retail consumer trade item or base unit level.
- A unique GTIN is assigned at every existing level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	GTIN change for retail consumer trade item/base unit?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
Add or Remove certification mark	YES	YES

2.5.2 Example business scenarios that require GTIN change

- Addition or removal of an EU Ecolabel certification mark.
- Addition or removal of an “Energy Efficiency” logo provided by a government approved agency.
- Addition or removal of an FSC or PEFC certification mark.

2.5.3 Additional information

- For the purpose of interpretation of this rule, a certification mark is a symbol, logo or wording on a product that declares a product has met specific criteria and standards in formulation, harvesting, processing or manufacturing (e.g., European Certification Mark) and that can be externally verified by a certification authority or agency which can be either a public or private authority.
- Local, national, or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

2.5.4 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?
Dimensional or gross weight change	YES	YES	YES	NO

2.6 Primary brand

The primary brand is the brand most recognisable by the consumer, as determined by the brand owner, and can be expressed as a logo and/or words.

A change to the primary brand that appears on the trade item, requires assignment of a new GTIN.

2.6.1 Hierarchy level of GTIN change

- The GTIN change occurs at the retail consumer trade item or base unit level.
- A unique GTIN is assigned at every existing level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	GTIN change for retail consumer trade item/base unit?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
Primary brand	YES	YES

2.6.2 Example business scenarios that require GTIN change

- The company's primary brand name changes from "Good Construction Products" to "Better Construction Products".

2.6.3 Additional information

- Local, national, or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

2.6.4 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?
Primary brand	YES	NO	NO	NO

2.7 Time critical or promotional product

A change to a product that is being promoted (including packaging changes) for a specific event or date, impacting the required handling in the supply chain to ensure the trade item is available for sale during a specified time period, requires assignment of a new GTIN.

2.7.1 Hierarchy level of GTIN change

- No GTIN change is required at the retail consumer trade item/base unit level.
- A unique GTIN is assigned at every existing level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	GTIN change for retail consumer trade item/base unit?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
Time critical or promotional product	NO	YES

2.7.2 Example business scenarios where a unique GTIN at the higher-level packaging (e.g., pack, case, pallet) is required

- A free trial item (not identified with its own GTIN) is attached to an existing item for a promotional period, the declared net content of the original item is unchanged and packaging dimensions or the gross weight of the product are NOT changed by more than 20%.
- For a period of two months, a set amount of the proceedings for a specific product is donated to a charity. This is indicated by information on the package.
- An extra battery is included together with a electric screwdriver.
- A promotional version of a product is launched with "Special offer" printed on the packaging.

2.7.3 Additional information

- For time critical promotions, the GTIN for the retail consumer trade item/base unit level does not need to be changed, but for tracking in the supply chain, the case and pallet needs to be uniquely identified.
- Local, national, or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

2.7.4 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?
Time Critical or Promotional Product	YES	NO	YES	NO

2.8 Pack/case quantity

A change to the number of trade items in a case or a change to the quantity of cases in a pre-defined pallet configuration, requires assignment of a new GTIN.

2.8.1 Hierarchy level of GTIN change

- A unique GTIN is assigned at every existing level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	GTIN change for retail consumer trade item/base unit?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
Pack/case quantity	N/A	YES

2.8.2 Example business scenarios where a unique GTIN at the higher-level packaging (e.g., pack, case, pallet) is required

- A case configuration changes from containing 8 trade items to containing 12 trade items, the case needs to be uniquely identified.
- A pallet configuration changes from containing 12 boards to containing 16 boards, the pallet needs to be uniquely identified.

2.8.3 Additional information

- Local, national, or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

2.8.4 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?
Pack/case quantity	NO	YES	YES	NO

2.9 Pre-defined assortment

A pre-defined assortment is defined as a pack of two or more trade items that are combined and sold together as a single trade item (may also be referred to as a bundle).

A change, addition, or replacement of one or more trade items included in a pre-defined assortment, requires assignment of a new GTIN.

2.9.1 Hierarchy level of GTIN change

- The GTIN change occurs at the retail consumer trade item or base unit level.
- A unique GTIN is assigned at every existing level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	GTIN change for retail consumer trade item/base unit?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
Pre-defined assortment	YES	YES

2.9.2 Example business scenarios that require GTIN change

- A bathroom furniture package is changed so it now also includes a mirror.
- A shower faucet set is changed to no longer contain a soap holder.
- In a set of bits, two are replaced with other dimensions.
- In an assortment of screws one of the dimensions are replaced.

2.9.3 Additional information

- The individual trade items included in the assortment are explicitly defined by the trading partners and carry their own, unique GTIN separate from the GTIN assigned to the assortment.
- Local, national, or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

2.9.4 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?
Pre-defined assortment	YES	YES	YES	NO

2.10 Price on pack

‘Price on pack’ is defined as when the brand owner includes pre-pricing as part of the package graphics. This is not considered a price marked on a price ticket, sticker, hangtag or anything that could be removed from the package or product.

Any addition, change or removal of a price marked directly on the product package (not recommended), requires assignment of a new GTIN.

2.10.1 Hierarchy level of GTIN change

- The GTIN change occurs at the retail consumer trade item or base unit level.
- A unique GTIN is assigned at every existing level of the packaging hierarchy above the retail consumer trade item/base unit level.

GTIN Rule name	GTIN change for retail consumer trade item/base unit?	New GTIN for higher level packaging (e.g., pack, case, pallet)?
Price on pack	YES	YES

2.10.2 Example business scenarios that require GTIN change

- The pre-printed price on a package changes from €3 to €2.
- A selling price of €8 is added to a product's packaging.
- The Manufacturing Suggested Retail Price (MSRP) is set at \$2.19 and is included in the packaging graphics.

2.10.3 Additional information

- There is a danger that the price declaration to the consumer (on the pack) is different to the price charged (price in retailer(s) system). Pricing legislation normally means that the price shown must equal (or be greater than) the price charged to the consumer. It is strongly recommended not to include a pre-printed price on pack due to these challenges.
- Local, national or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

2.10.4 Relevant guiding principles

GTIN Rule name	Is a consumer and/or trading partner expected to distinguish the changed or new product from previous/current products?	Is there a regulatory/liability disclosure requirement to the consumer and/or trading partner?	Is there a substantial impact to the supply chain (e.g., how the product is shipped, stored, received)?	Is there a substantial impact on maintenance, next use, recovery, or decommissioning?
Price on pack	YES	YES	YES	NO