NEFAB DANGEROUS GOODS PACKAGING

YOUR
PACKAGING
SOLUTION.

NEFAB

We have the engineering capability to provide complete, multi-material packaging solutions for dangerous goods

UN CERTIFIED PACKAGING SOLUTIONS

FOR DANGEROUS GOODS TO BE CLEARED FOR TRANSPORT, THEY MUST BE PROPERLY:

- Classified
- Labelled
- Packaged
- Documented
- Marked

→ Dangerous Goods is a designation for substances and products that have such dangerous characteristics that they can cause harm to humans, animals, environment or property if they are not handled correctly during transport or storage. Even emptied packages or containers that have contained such substances can, in some cases, be regarded as dangerous goods.
The basic purpose for dangerous goods packaging is to fully contain the dangerous goods, even if the box is being put under great stress.

Nefab can provide both existing solutions that are already certified for packaging dangerous goods, as well as new solutions that we design, test and validate according to your specific needs. We have the engineering capability to provide complete, multi-material packaging solutions for various classes of dangerous goods, allowing us to be the most reliable partner for your packaging needs, from the outer packaging itself to every accessory in between, such as absorbents, labels and tapes.


Packaging Identification Code
Gross Mass In Kilograms (kg)
Year of Manufacture
Certification Mark / Manufacturer's Symbol
4D / Y 171 / S / YR / S / SP-11 75 88
United Nations Packaging Symbol
Packing Group Level Equivalent
Solid or Inner Packagings
Country of Approval
4D/Y171/S/YR/S/SP-11 75 88

Our engineers use the latest 3D-CAD software and applications during the design process

ENGINEERING CAPABILITIES

With Nefab's worldwide engineering resources, which includes several ISTA certified test labs, we can provide you with complete packaging solutions on a global scale.

DESIGN CAPABILITIES

Providing engineered, multi-material packaging solutions worldwide calls for extra consideration in the design process, which is why our engineers use a systematic design approach when evaluating each situation. Operating in this way, we can ensure that our solutions are tailor-made to provide the highest possible benefit to you.

Nefab has engineering centers in the Americas, Asia, and Europe, and more than 200 packaging engineers across the world to accommodate our customers and the challenges they face, whether it be on a local or global level.

Our engineers use the latest 3D-CAD software and applications during the design process. Nefab has access to several tools to aid in the design process as well, such as Finite Element Analysis to measure stresses and strains and Load Optimization to enhance transportation efficiency. We also use GreenCalc, a tool Nefab has developed internally to more accurately measure your carbon footprint throughout the logistics cycle, as well as the reductions that Nefab's solutions can generate.

TEST LABS

Just as designing our packaging does, testing packaging also requires a very structured approach; each product and industry require different methods and knowledge when it comes to testing and test standards. At Nefab, our engineers understand the importance of this and have experience adhering to the strict testing requirements imposed on dangerous goods.

Nefab has the ability to simulate various conditions that packaging can be exposed to in the different stages of its lifecycle. Between our four ISTA certified test labs, our engineers are able to utilize numerous types of testing equipment, allowing for a wide breadth of test scenarios to help us design the most effective packaging for each individual case.

Below are examples of key machines we employ in our test labs:

- Vibration Tables
- Compression Testers
- Climate Chambers
- Drop Testers
- Incline Tables
- Shock Recorders

As our customer, you are always welcome to join our engineers in the test lab. Open communication in this regard gives us the flexibility needed to accommodate for improvements or changes in design during the testing process.

DETERMINING BETWEEN PRE-APPROVED OR NEW PACKAGING

The most common means of selecting a packaging for dangerous goods is based on packaging that has already been approved for the product in question. However, this is not always possible or feasible due to various factors, such as the product's weight, dimensions or handling requirements. If this is the case, we can also develop a new type of packaging for you. At Nefab, we can guide you through the process to help find which method fits best with your application.

PRE-APPROVED PACKAGING

Nefab has a multitude of certificates for dangerous goods, covering over 600 different boxes, all of which are accredited according to UN standards. All of these boxes, as outer packaging, or together with internal packaging, make up complete packaging solutions for dangerous goods. To determine if our approved solutions can be used with your product, we will first investigate if the material of this dangerous goods class is approved to send with your intended method of transportation. Then, we will calculate the gross weight of the shipment and see if we have an approved dangerous goods certificate that matches your product.

CREATING NEW PACKAGING

If there is no pre-approved packaging which fully accommodates your product, Nefab can develop a new type of packaging. Due to the stringent requirements stipulated by the UN for dangerous goods packaging, the developed solution must go through a type approval test before it can be used to ship these goods. International agreements for the carriage of dangerous goods require packaging to be of a design-type, certified by a national competent authority. This involves testing the packaging against the appropriate UN specifications to ensure its suitability for the carriage of certain dangerous goods. Our engineers have the skillset and experience to take new dangerous goods packaging through this process.

ENGINEERED SOLUTIONS

→ As a Complete Packaging Solution provider, you can trust Nefab as a partner for all your packaging needs – from packaging design to supply and other related services. This allows you to cut costs in several ways. There is no need for in-house design capability, and purchasing is more effectively managed by Nefab's global supply and service platform.

We also provide the logistics resources to offer warehouse management, packing and warehousing services, which reduce tied-up capital and space. Our engineers follow a certain set of steps in order to fully optimize your dangerous goods packaging solution, as shown below:

METHOD

1. NEEDS ANALYSIS

The first step is to understand the product characteristics and your logistical flows. It is especially important when dealing with dangerous goods to establish what Dangerous Goods Classification your product would fall under and what transportation modes are used in your logistical flows.

2. DESIGN & TESTING

A new, complete packaging solution is developed based on the needs analysis. Samples are produced according to requirements, and validation is performed through physical tests, trial packaging, and/or simulations. The type approval test includes drop tests, stacking tests, and bottom lift tests, as well as ensuring that the packaging has been properly identified and measured. Nefab will arrange certification of newly developed packaging together with a national competent authority.

3. SELECTION OF PRODUCTS AND SERVICES

The right products and materials are selected according to previous analyses and testing results. During this step, decisions to implement additional services that can reduce your packaging costs are made as well.

4. IMPLEMENTATION & FOLLOW-UP

Packaging solutions are delivered and implemented into your logistical flow. Nefab will contribute with continued support and coordination during the implementation phase.

PRE-APPROVED PACKAGING SOLUTIONS

REFERENCES

RETURNABLE SOLUTION FOR BATTERIES

The RePak Type TC is a returnable packaging solution made from 6 and 8 mm plywood (for the frame and the lid/base, respectively). The box is fitted with a polyethylene bag liner and is strapped to the pallet.

Packing Group: I

Packaging Type: 4D

Class: 9

Gross weight: 411 kg

EXPENDABLE SOLUTION FOR AMMUNITION

The ExPak P is an expendable packaging solution made from 6 mm plywood. Handle straps have been included for easier handling and added durability.

Packing Group: II

Packaging Type: 4D

Class: 1

Gross weight: 27 kg

UN CERTIFIED STEEL CONTAINER FOR AIRBAG MODULES

Our steel container is a returnable packaging solution available in three different configurations. This solution is optimized for truck and sea freight, and is designed to hold multiple airbag modules, as inner fittings can be customized for several modules. Exchangeable inner thermoform trays allow reuse of outer packaging for different airbag modules.

Packing Group: II

Packaging Type: 4A

Class: 9

Gross weight: 550 kg

LITHIUM BATTERIES

The solution used here is a BC flute corrugated packaging with EPP foam inner fittings. Due to the dimensions of this solution, several of the boxes can be secured on the same pallet by means of strapping, offering an efficient utilization of space in its transportation.

Packing Group: II

Packaging Type: 4G

Class: 9

Gross weight: 12, 28 and 42 kg, respectively

EXPENDABLE SOLUTION FOR SOLID TOXIC SUBSTANCES

The ExPak P is an expendable packaging solution made from 6 and 8 mm plywood (for the frame and the lid/base, respectively). The box also includes expanded polystyrene inner fitments for additional product protection.

Packing Group: I

Packaging Type: 11D

Class: 6.1

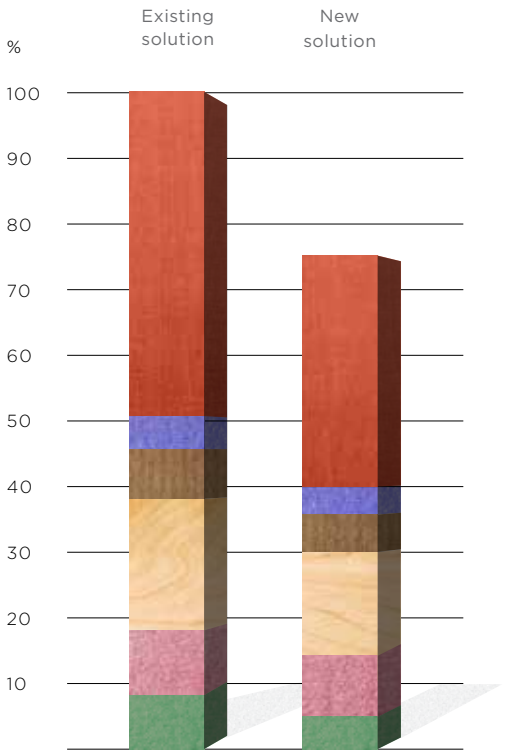
Gross weight: 1153 kg

SOLUTIONS TO REDUCE YOUR TOTAL COST AND ENVIRONMENTAL IMPACT

→ By addressing the different stages in your supply chain, we can offer optimized packaging solutions that reduce your total cost of logistics.

Nefab's concept is to identify the major cost driving factors and then develop a complete packaging solution that minimizes total costs.

With the ability to design and supply complete packaging solutions, Nefab's total cost approach is effective and unique within the packaging industry.



TOTAL COST APPROACH

TRANSPORT
Optimize packaging size and weight to increase transport efficiency (cost and CO_2).

ADMINISTRATION
Reduce costs for order administration by EDI & VMI solutions. Delivery of complete packaging sets.

WAREHOUSING
Reduce need for storage space and capital costs for finished goods as well as packaging stock.

PRODUCT PROTECTION
Optimize packaging solutions in terms of cost for product protection in relation to cost for damages.

HANDLING
Reduce packing time and improve ergonomics.

ENVIRONMENT
Improve or eliminate waste handling, and increase reusability.

YOUR DANGEROUS GOODS SOLUTION

At Nefab, we have the engineering capability to provide you with certified solutions for many classes of dangerous goods, no matter the application or transport mode and from the outer packaging itself to every accessory in between, such as absorbents, labels and tapes.

Questions? Please feel free to contact us at **dg@nefab.com**

IMPROVING BUSINESS. IN YOUR WORLD

With our **MULTI-MATERIAL DESIGN & TESTING** capabilities, we can develop complete packaging solutions for any product.

Our **TOTAL COST APPROACH** ensures that packaging is optimized, reducing total cost in your supply chain.

In addition, our **GLOBAL SUPPLY & SERVICE** capabilities ensure that we are there to provide local support and global coordination.

Questions? Please feel free to contact us at **dg@nefab.com**

Your mission is our mission. We develop complete packaging solutions optimized to reduce total cost and environmental impact in your supply chain. With our global engineering and supply capabilities we serve you in every corner of the world.

NEFAB YOUR PACKAGING SOLUTION.

NEFAB.COM