# NOTIFICATION

**Peshawar Dated the 25/07/2025**

**No. SO(ENVT)/CCFE&WD/1-8/EPC-2025:** In exercise of powers conferred under Clause xxii of Section 7 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, (Khyber Pakhtunkhwa Act No. XXX of 2022), the Khyber Pakhtunkhwa Environmental Protection Council (EPC) in its 3rd Meeting held on 13.05.2025 has been pleased to approve the following guidelines for General Environmental Approval (GEA);

## GUIDELINES FOR PAPER BOARDS

**Definition:**
Paperboard, also known as cardboard, is a thick and rigid paper-based material. It is specifically designed for various applications such as packaging, printing, and graphic arts. Paperboard is distinct from regular paper due to its higher thickness, durability, and stiffness. It can be produced from various raw materials, including wood pulp or recycled paper fibers, and it is available in different grades and thicknesses to suit diverse uses. Common applications of paperboard include the production of boxes, cartons, book covers, posters, and various other forms of packaging and printed materials. The term "paperboard" is often used interchangeably with "cardboard," although the latter is sometimes associated with thicker and sturdier types of paperboard.

**Raw Materials:**
- Wood pulp
- Recycled paper
- Additives (for desired properties)

**Pulping Methods:**
- Mechanical pulping
- Chemical pulping
- Recycled pulping

**Paper Formation Process:**
- Pulp slurry creation
- Spreading on a mesh screen
- Draining water to form a wet sheet

**Pressing:**
- Removal of excess water
- Consolidation of fibers

**Drying:**
- Application of heat to remove remaining moisture

**Surface Treatment and Coating:**
- Coatings for smoothness
- Printability enhancements
- Special finishes for specific applications

**Calendering:**
- Pass through calender rolls for improved surface finish

**Cutting and Reel Production:**
- Cutting into reels of varying width and diameter

**Quality Control:**
- Continuous checks for strength, thickness, and surface finish

**Packaging and Shipping:**
- Reels packaged according to customer specifications
- Prepared for shipping to various destinations

**Maintenance and Facility Management:**
- Regular upkeep of machinery and equipment
- Infrastructure maintenance for smooth operations

**Environmental Management:**
- Recycling waste materials
- Optimizing energy usage
- Adhering to environmental regulations

**Applications:**
- Packaging materials (boxes, cartons)
- Printing (cards, posters)
- Graphic arts
- Various industrial applications

**Properties:**
- Thickness and density variations
- Smooth surface finish
- Printability
- Strength and durability

**End Products:**
- Paperboard reels
- Cut and finished paperboard sheets
- Customized for specific industries and applications

## Features of paper board

1. **Thickness:**
   - Varied thickness options available to suit specific applications.
2. **Density:**
   - Different density levels based on the intended use and customer requirements.
3. **Smooth Surface:**
   - Typically has a smooth surface finish, suitable for printing and graphics.
4. **Printability:**
   - Designed for high-quality printing, making it suitable for packaging and promotional materials.
5. **Strength:**
   - Exhibits strength and durability, providing support and protection for packaged goods.
6. **Rigidity:**
   - Offers rigidity and stiffness, making it suitable for structural applications.
7. **Customization:**
   - Can be customized for specific industry needs and applications.
8. **Coating Options:**
   - Surface coatings available for additional properties such as water resistance or special finishes.
9. **Recyclability:**
   - Often made from recycled materials and is recyclable, contributing to sustainability efforts.
10. **Versatility:**
    - Versatile material used in a range of applications from packaging to graphic arts.
11. **Suitability for Folding and Creasing:**
    - Can be easily folded and creased without cracking, making it suitable for various packaging designs.
12. **Resistance to Tear and Wear:**
    - Resistant to tearing and wear, ensuring the integrity of packaging during transportation.
13. **Lightweight:**
    - Despite its thickness, paperboard is relatively lightweight, making it convenient for packaging and handling.

14. **Adaptability to Printing Techniques:**
    - Compatible with various printing techniques, including offset, digital, and flexography.
15. **Barrier Properties:**
    - Some types of paperboard can be designed with barrier properties for protection against moisture, light, and other external factors.
16. **Cost-Effectiveness:**
    - Offers a cost-effective solution for packaging and printing needs.
17. **Environmental Friendliness:**
    - Considered environmentally friendly due to the use of recycled materials and recyclability.
18. **Resistance to Chemicals:**
    - Depending on the coating and treatment, paperboard can exhibit resistance to certain chemicals.

## Various activities in Paper Board manufacturing

1. **Raw Material Preparation:**
    - The process begins with the preparation of raw materials. This includes sourcing wood pulp, recycled paper, and other additives required for the manufacturing process.
2. **Pulping:**
    - Pulping is the process of breaking down the raw materials into fibers. There are different methods of pulping:
        - Mechanical Pulping: Involves grinding or refining the raw materials to separate the fibers mechanically.
        - Chemical Pulping: Involves treating the raw materials with chemicals to dissolve the lignin and separate the fibers.
        - Recycled Pulping: Involves using recycled paper as a raw material, which is pulped to create new fibers.
3. **Paper Formation:**
    - Once the fibers are obtained through pulping, they are mixed with water to create a pulp slurry. This slurry is then spread evenly onto a moving mesh screen, allowing water to drain away and forming a wet sheet of paper.
4. **Pressing:**
    - The wet paper sheet passes through press rollers to remove excess water and consolidate the fibers. This step helps in increasing the paper's density and strength.
5. **Drying:**
    - The pressed sheet of paper is then passed through drying cylinders or conveyor belts where it is subjected to heat to remove the remaining moisture. This results in a dry sheet of paperboard.
6. **Surface Treatment and Coating:**
    - Depending on the desired properties of the paperboard, it may undergo surface treatments and coatings. This could involve applying coatings for smoothness, printability, or adding special finishes for specific applications.
7. **Calendering:**
    - Calendering is a finishing process where the paperboard is passed through calender rolls under pressure to improve its surface finish, smoothness, and thickness uniformity.
8. **Cutting and Reel Production:**
    - Once the paperboard reaches the desired thickness and finish, it is cut into large rolls known as reels. These reels can vary in width and diameter based on customer specifications.
9. **Quality Control:**
    - Throughout the manufacturing process, quality control checks are performed to ensure the paperboard meets the required specifications for strength, thickness, surface finish, and other properties.
10. **Packaging and Shipping:**

- The finished paperboard reels are packaged according to customer requirements and prepared for shipping to various destinations. Proper packaging ensures the protection of the paperboard during transportation.

11. **Maintenance and Facility Management:**
    - Regular maintenance of machinery, equipment, and infrastructure is essential to ensure smooth operation and minimize downtime in the factory.
12. **Environmental Management:**
    - Efforts are made to minimize environmental impact through measures such as recycling waste materials, optimizing energy usage, and adhering to environmental regulations.

## Environmental Impacts of Paper Board Factories

The environmental impacts of paperboard factories can vary based on factors such as raw material sourcing, manufacturing processes, waste management, and energy consumption. Here are some key environmental impacts presented in bullet points:

- **Deforestation:**
    - Demand for wood pulp, a key raw material, can contribute to deforestation if not sourced sustainably.
- **Resource Depletion:**
    - High water usage in the papermaking process can lead to depletion of local water resources.
- **Air and Water Pollution:**
    - Chemicals used in pulping and papermaking processes may result in air and water pollution if not properly treated.
- **Greenhouse Gas Emissions:**
    - Energy-intensive processes in paperboard manufacturing can contribute to greenhouse gas emissions, especially if fossil fuels are used.
- **Waste Generation:**
    - Generation of solid waste, including unused paper and chemicals, can contribute to landfill and environmental pollution.
- **Chemical Usage:**
    - Use of chemicals in the manufacturing process, such as bleaching agents and coatings, can have environmental implications.
- **Habitat Disruption:**
    - The extraction of raw materials and establishment of paperboard factories can disrupt local ecosystems and habitats.
- **Biodiversity Impact:**
    - Deforestation and habitat disruption can negatively impact biodiversity in the surrounding areas.
- **Transportation Impact:**
    - Transportation of raw materials and finished products can contribute to carbon emissions and air pollution.
- **Land Use Change:**
    - Conversion of natural landscapes into industrial areas for paperboard factories can result in significant land use change.
- **Energy Consumption:**
    - The energy-intensive nature of paperboard manufacturing, especially if derived from non-renewable sources, can contribute to resource depletion.
- **Water Quality Impact:**
    - Discharge of wastewater from the manufacturing process can affect local water quality if not treated adequately.
- **Community Health Concerns:**
    - Emissions and pollutants from the factory may impact the health of nearby communities.
- **Sustainable Practices:**

- Implementation of sustainable practices, such as using recycled materials, adopting eco-friendly processes, and investing in renewable energy, can mitigate environmental impacts.

## Environmental guidelines for paperboard manufacturing and processing Factories

Environmental guidelines for paperboard manufacturing factories are typically aimed at minimizing the environmental impact of operations while promoting sustainability and compliance with regulatory requirements. These guidelines cover various aspects of the manufacturing process, including raw material sourcing, production processes, waste management, emissions control, and energy efficiency. Here's a detailed explanation of environmental guidelines for paperboard manufacturing factories:

1. **Raw Material Sourcing:**
   - Guidelines encourage the use of sustainably sourced raw materials, such as wood pulp from certified forests or recycled paper. Sustainable forestry practices aim to minimize habitat destruction, protect biodiversity, and maintain ecosystem integrity.
2. **Energy Efficiency:**
   - Factories are encouraged to implement energy-efficient technologies and practices to reduce energy consumption. This may include investing in high-efficiency equipment, optimizing production processes, and utilizing renewable energy sources such as biomass or solar power.
3. **Water Conservation:**
   - Guidelines promote water conservation measures to minimize the use of freshwater resources. This may involve recycling and reusing process water, implementing closed-loop water systems, and adopting water-saving technologies.
4. **Pollution Prevention:**
   - Factories are required to implement pollution prevention measures to minimize air and water pollution. This includes using cleaner production processes, controlling emissions of pollutants such as particulate matter, volatile organic compounds (VOCs), and sulfur dioxide (SO2), and treating wastewater before discharge.
5. **Waste Management:**
   - Guidelines emphasize the reduction, reuse, and recycling of waste materials generated during the manufacturing process. Factories are encouraged to implement waste minimization strategies, segregate and recycle waste streams, and properly dispose of hazardous materials according to regulations.
6. **Emissions Control:**
   - Factories must monitor and control emissions of air pollutants to comply with regulatory standards. This may involve installing pollution control devices such as electrostatic precipitators or scrubbers, conducting regular emissions testing, and reporting emissions data to regulatory authorities.
7. **Environmental Monitoring and Reporting:**
   - Factories are required to conduct environmental monitoring to assess the impact of operations on the surrounding environment. This includes monitoring air and water quality, noise levels, and wildlife habitat. Facilities are also required to report environmental performance data to regulatory agencies and the public.
8. **Compliance with Regulations:**
   - Factories must comply with local, national, and international environmental regulations governing air quality, water quality, waste management, and other environmental aspects. This may include obtaining permits, conducting environmental impact assessments, and maintaining records of environmental compliance.
9. **Employee Training and Awareness:**
   - Factories should provide training to employees on environmental policies, procedures, and best practices. Employee awareness programs can help foster a culture of environmental responsibility and encourage participation in sustainability initiatives.

10. **Continuous Improvement:**
    - Factories are encouraged to continuously improve their environmental performance through the implementation of environmental management systems (EMS), regular environmental audits, and participation in industry initiatives and best practices.

By adhering to these environmental guidelines, paperboard manufacturing factories can minimize their environmental footprint, reduce resource consumption, and contribute to sustainable development. Compliance with regulations and industry standards is essential for ensuring environmental protection and long-term viability of operations.

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**Secretary to Govt. of Khyber Pakhtunkhwa**
**Climate Change, Forestry, Environment & Wildlife**
**Department**

**No. SO(ENVT)/CCFE&WD/1-8/EPC-2025:**

**Copy for information to;**

1. All members of Environmental Protection Council (EPC) Khyber Pakhtunkhwa
2. PS to Secretary Climate Change, Forestry, Environment & Wildlife Department, Khyber Pakhtunkhwa

20/8/25

**Muhammad Ishaq**
**Section Officer (Environment)**