KÖSTER

KÖSTER Roof Inspection and Maintenance Manual

Roof Inspection and Maintenance Guide

This guide outlines recommended practices for conducting regular roof inspections and routine maintenance. It serves as a practical resource to help plan and implement a structured inspection and maintenance program.

KÖSTER TPO membranes and accessories are designed with a unique formulation that requires minimal maintenance. However, as these membranes function as part of a broader roofing system, they are subject to various external influences that may affect their performance over time. To maintain optimal waterproofing and extend the roof's lifespan, periodic inspections and maintenance are essential.

To qualify for an extended warranty, an appropriate inspection and maintenance plan must be in place.

By adhering to a consistent maintenance schedule, minor issues can be detected early before escalating into major problems. This proactive approach helps prevent operational disruptions, safeguards building interiors, and ultimately protects the investment by extending the roof's service life.

1. Scheduled Roof Inspections and Maintenance

Regular roof inspections and maintenance should be carried out as part of a well-structured programme and performed by a qualified specialist contractor.

A comprehensive inspection should cover all elements of the roofing system. Detailed records must be maintained, noting any signs of wear, unusual foot traffic, drainage issues, debris accumulation, ballast movement or loss, and surface erosion.

These inspection records should always be linked to a detailed roof plan that includes all penetrations, rooftop equipment, and other relevant features. This approach helps prevent miscommunication with contractors and creates a consistent record of the roof's condition— enabling meaningful comparisons over time and supporting proactive maintenance decisions.

Seasonal inpections allow for early detection of potential damage following periods of temperature fluctuation, freeze-thaw cycles, heavy rain or snowfall.

1.1 Every Six Months

Roof inspections should be conducted twice annually, once in early spring and another in late autumn.

The primary goals of these inspections are to:
- Identify any damage to the roofing system
- Ensure rainwater outlets are clear and functioning properly
- Inspect the condition of the membrane and search for damages inflicted by carried works by other installations such as solar panels, post-installed skylights and other.
- Confirm no materials or tools from other trades have been left on the roof
- Inspect the condition of lightning protection and fall arrest systems

Regular inspections help prevent the buildup of dirt and debris that could lead to damage, and allow for early detection of potential issues— enabling timely repairs. These routine checks should include a general assessment of the roof and all related components. Particular attention should be given to gutters and drainage outlets, which can become blocked by leaves and debris, leading to water ponding and potential structural concerns.

Conduct the following works:
- Clean all leaf guards and rainwater outlets
- Clean and remove all debris and dirt on the roof
- Clean and remove any dirt (soil, sand, vegetation) on the roof and on the membrane
- General inspection of the seams for identification of incorrect welding
- General visual inspection of the roof and the equipment installed for identification of abnomalities.

1.2 Every Year

In addition to biannual inspections, a thorough evaluation of the flat roof should be conducted once a year to detect emerging issues and replace any damaged components.

Before starting any repair or maintenance work, always refer to the original roofing specifications— especially if the roof is covered by a warranty. In such cases, all remedial work must be performed by the original installation contractor to maintain the validity of the guarantee.

As with the semi-annual checks, the roof should be cleared of debris, and all gutters and drainage outlets must be cleaned. Damaged gratings or protective wire cages should be replaced, and any compromised flashings, trims, or cappings must be renewed to preserve the integrity of the roofing system.

Conducting the following works:
- Visual inspection of PU, MS or Silicone sealants used and repair with the installation of a new sealant in case of damages.
- Inspect the seams to detect incorrect welding – perform repair weldings according to the manufacturer's repair manual.
- Inspect the fasteners and detect any leaks and signs of corrosion.
- Verify all flashings, metal sheet trims and capping for damages and imperfections.
- Find and detect any signs of water infiltration, settlement in the exterior walls or deck, rusting or spalling of the deck, shrinkage or cracking.
- Find and detect mechanical damages on the surface of the membrane and perform repairs according to the manufacturer's repair manual.

All repairs should be carried out by an approved and certified KÖSTER roofing company.

1.3 Every five years

Every five years, a comprehensive inspection of the roof structure should be carried out by a qualified professional— either an experienced roofing contractor or the roofing system manufacturer. This in-depth assessment is crucial for identifying not only existing issues but also potential future concerns that may not be visible during routine inspections.

Because many structural problems can go unnoticed by an untrained eye, it is essential that this inspection is conducted by a professional with expertise in roofing systems.

Particular attention should be given to the condition of the structural components of the roof. Areas where timber decking has been used must be carefully examined, as wood is particularly vulnerable to moisture-related deterioration over time. Early detection of such issues can prevent serious damage and extend the overall service life of the roofing system.

2. General Guidelines

2.1 Roof Access

Only authorized personnel properly trained and aware of the potential hazards should be allowed to access the roof.

All access activities must strictly follow current safety regulations and involve the use of appropriate collective protective equipment and/or personal protective equipment (PPE).

Everyone working on the roof must wear PPE suited to the specific tasks, such as safety harnesses and lifelines.

Exercise caution when accessing the roof during wet or icy conditions, as surfaces may become slippery.

2.2 Roof Accessibility

KÖSTER TPO roofs are intended to be accessed solely for maintenance purposes, including:

- Servicing the waterproofing membrane
- Maintaining any technical equipment installed on the roof

If the roof houses equipment that requires regular upkeep, it is advisable to install designated walkways— such as KÖSTER TPO Walkway Membrane —to prevent damage to the waterproofing layer and to provide a safe, clear route for personnel.

When walking directly on the membrane, always wear suitable footwear to protect both the membrane and yourself. Avoid cleated soles unless you have thoroughly checked for gravel or abrasive debris that could puncture the membrane. Never place heavy or sharp objects directly on the membrane without protective boards (e.g., plywood or OSB) to distribute the load evenly.

2.3 Ballasted Roofs Accessibility

Access permissions depend on the type of ballast used:

- **Gravel ballast:** Access allowed only for maintenance of the roof or technical equipment
- **Paving slabs on support pads:** Access allowed for maintenance and walking
- **Tiles on concrete support:** Access allowed for maintenance and walking
- **Green roofs:** Access allowed for green roof system maintenance

2.4 Roof Cleaning

A clean roof is a functional roof. The accumulation of debris, leaves, moss, algae, or silt accumulates (e.g., due to ponding), on the membrane surface can compromise drainage and promote degradation. Therefore, routine cleaning is a critical maintenance measure.

Start by removing all loose debris manually or with soft brooms and ensure that drains, scuppers, gutters, and overflow systems are completely free of obstructions. Blocked drainage can lead to ponding water, which in turn increases the risk of leaks, overloading, and microbial growth.

Clean the membrane with a mixture of water and a mild, non-abrasive household cleaner with pH-neutral. Use soft sponges, brushes with gentle bristles, or brooms, then rinse with water. Avoid proprietary fungicides or harsh chemicals, as these may damage the membrane or be incompatible with its materials.

Cleaning should be done with caution to avoid damaging the membrane or its seams. Never use pressure washers or metal scrapers on KÖSTER membranes.

Regular cleaning not only enhances the appearance and safety of the roof but also provides a better surface for visual inspections, making it easier to detect cracks, punctures, or early signs of deterioration.

2.5 Technical Equipment on Roof

All rooftop equipment (such as air conditioning units) must be installed on suitable supporting surfaces that protect the membrane and distribute the load evenly. Direct contact between equipment and the waterproofing membrane is prohibited.

Equipment must not emit or leak harmful substances—liquids, solids, or gases—that could degrade the waterproofing system. During maintenance of rooftop equipment, take care to prevent spills or debris that could harm the membrane. Any accidental contamination must be cleaned immediately, following environmental safety regulations.

For guidance or questions, always reach out to an authorized KÖSTER roofing specialist.

2.6 Snow Management Roof Accessibility

KÖSTER TPO membranes are highly resistant to cold temperatures, and snow accumulation generally does not damage the membrane or require special treatment. However, it is advisable to:

- Keep rainwater outlets clear to facilitate meltwater drainage
- Reduce heavy snow buildup near rooflights, chimneys, and other openings to prevent overflow or structural overload

Exercise extreme care when removing snow—use appropriate safety gear and avoid metal shovels, opting instead for plastic blades with rounded edges to protect the membrane.

Ice-melt products containing potash, urea, calcium chloride, or sodium chloride are safe for use on KÖSTER TPO membranes but may cause corrosion or discoloration of metal components. When unsure, contact a KÖSTER roofing professional for advice.

2.7 Repair and Alterations

All damage discovered during inspections or daily operation must be addressed without delay. The integrity of a waterproofing membrane depends on timely and professionally executed repairs. Under no circumstances should bituminous materials or incompatible adhesives be used on KÖSTER TPO membranes. Doing so can lead to chemical incompatibilities, which may dissolve or damage the membrane material.

Repairs must be carried out using KÖSTER-approved systems and procedures. Any repair, regardless of scale, should be preceded by proper cleaning and preparation of the surface. Small punctures or cracks must be sealed using KÖSTER-compatible sealants or membranes, applied according to KÖSTER's technical data sheets and repair manual.

Emergency repairs can be temporarily executed using TPO membrane patches. However, these are stopgap solutions and must be followed up with a complete and permanent repair by trained personnel or a KÖSTER-certified contractor as soon as possible. When a roof is under warranty, all repairs must be conducted according to KÖSTER's maintenance protocols to ensure warranty conditions remain valid.

For any roof modifications or expansions, such as new chimneys or structural changes, consult a recognized KÖSTER roofing contractor before proceeding to avoid damaging the membrane or invalidating warranties.

3. Documentation and recordkeeping

To maintain a reliable record, every inspection should be documented carefully. This includes the date, weather conditions, the person or company conducting the inspection, and a detailed account of any irregularities or changes observed. If possible, photos should be taken from various angles and archived alongside the inspection report. Over time, this documentation helps establish a performance history and supports quicker troubleshooting in the event of damage.

Every repair should be logged with a description of the problem, materials used, methods applied, and a photographic record for future reference.

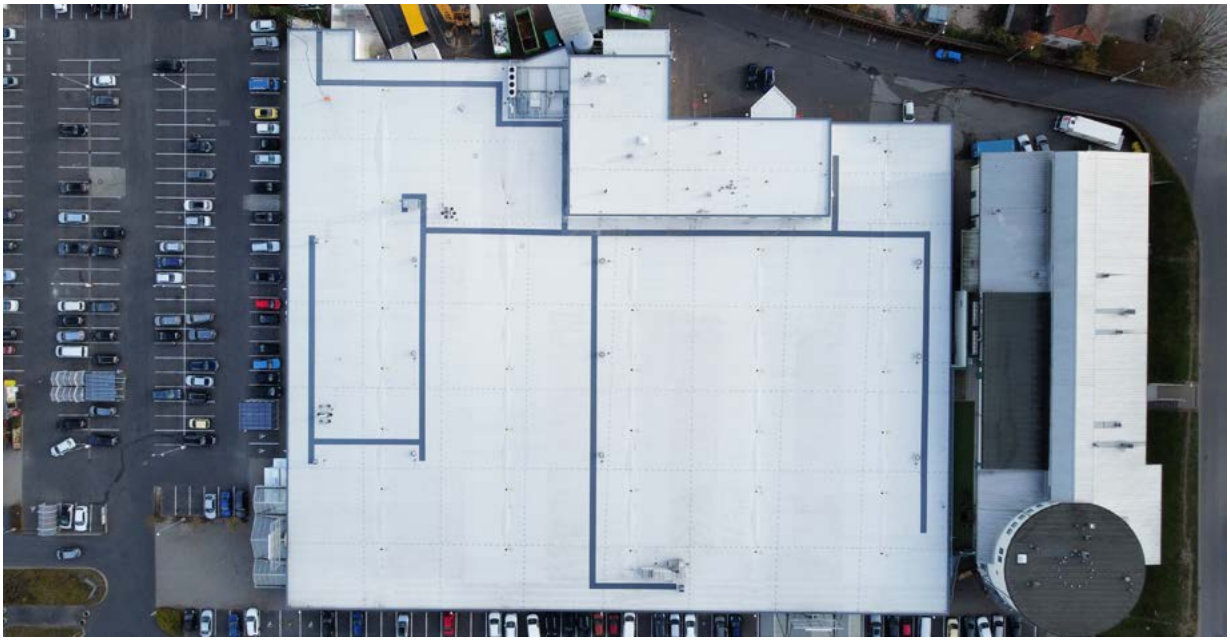
Maintaining an accurate and comprehensive log of inspections, repairs, and maintenance activities is essential. Each record should include dates, detailed descriptions of work performed, names of technicians or contractors, materials used, and before-and-after photos.

A well-maintained log serves as a vital reference for warranty claims, long-term planning, and performance evaluation. Ideally, documentation should correspond to a roof layout or plan to localize issues and track recurring concerns. Storing this information in both physical and digital formats is recommended for ease of access and archiving.

4. Contact and Support

For specific product queries, repair procedures, or technical assistance, KÖSTER offers a network of certified installers and regional representatives. Direct consultation with these experts ensures that all interventions remain compliant with product specifications and that the roof system performs as intended throughout its lifecycle.

To locate a certified KÖSTER partner or to request official documentation, visit the KÖSTER website or contact their technical support team directly.



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