

ADDRESSING THE NEEDS OF
OUR CUSTOMERS AND THE
ENVIRONMENT ONE HIGH
PERFORMANCE ROOFING
SOLUTION AT A TIME.

DERBIGUM

Maintenance & Inspection Guide



TABLE OF CONTENTS

Topic:	Page:
I. Introduction	1
II. Maintenance Guide	2
III. What to Look for During Inspection	3-7
IV. Most Common Problems	8
V. Record of Inspection & Repairs	9
VI. Inspection Checklist	10-11
VII. Emergency Repairs	12-13

DERBIGUM Americas, Inc.
Technical Services Department
4800 Blue Parkway
Kansas City, MO 64130

Phone: (800) 727-9872 / (816) 921-0221
Fax: (816) 924-1542

info@derbigum.com
www.derbigum.com



INTRODUCTION

DERBIGUM is providing this ***Maintenance and Inspection Manual*** in an effort to aid owners in the initiation of a maintenance program. The leading cause of premature roof system failure is often related to the lack of such a program. Periodic inspections and recommended maintenance will maximize the long-term performance of your investment.

Rooftop equipment maintenance and repair will also contribute to the longevity of your new DERBIGUM® roof system. Maintenance and repair of both the roof system and rooftop equipment should always be performed by qualified personnel. **Be sure to contact your local DERBIGUM Authorized Contractor (DAC) for all permanent DERBIGUM repairs and any questions regarding penetrations and rooftop equipment integration.**

This manual guides you through the observation and recognition of problems and potential problems, assisting you in maintaining **ORDER** with your maintenance program.

- O**bserve and inspect your DERBIGUM® roof often
- R**ecognize problems or potential problems
- D**etermine the cause of the problem
- E**xecute a plan of action
- R**emedy with maintenance or repair

DERBIGUM has found the National Roofing Contractor Association (NRCA) and the other roofing industry organizations listed below to be excellent resources for additional information. The NRCA has over 100 years of experience in the roofing industry. The following associations provide a wide range of information and services to help building owners and facility managers make informed decisions about replacing and maintaining their roof systems.

National Roofing Contractors Association (NRCA)
10255 W. Higgins Road, Suite 600
Rosemont, IL 60018-5607
800-323-9545
www.nrca.net

Roof Consultants Institute, Inc. (RCI)
1500 Sunday Drive, Suite 204
Raleigh, North Carolina 27607
800-828-1902
www.rci-online.org

Asphalt Roofing Manufacturers Association (ARMA)
Public Information Department
1156 -15th Street, NW., Suite 900
Washington, DC 20005
202-207-0917
www.asphaltroofing.org



OWNER MAINTENANCE GUIDE

DERBIGUM welcomes you to its growing family of Modified Bitumen Roof System owners. You can expect many years of service from your **DERBIGUM** roof, if the following recommendations are implemented:

1. At least twice a year, have the roof inspected by either your own maintenance people, a professional roofing consultant, or the **DERBIGUM Authorized Contractor (DAC)** who installed the system. At this time, debris must be removed from the roof, especially around drains, scuppers, and gutters. Ponding water on a roof surface may be the most significant factor in shortening the system's life. Standing water places a live load on the building's structural integrity, and it also provides water for vegetation growth, and temperature differentials, which lead to system damage during freeze-thaw cycles. Positive drainage and routine maintenance will minimize these potential problems.
2. If your **DERBIGUM** system is surfaced with a field applied roof coating – it will be necessary to periodically recoat the **DERBIGUM** membrane.
3. If new "roof mounted" equipment is to be added, **DERBIGUM** must be notified in advance of the modification or this guaranty shall be voided. Please include a written description along with a detailed drawing. Cutting through the **DERBIGUM** roof to add equipment or piping must be coordinated or performed by an approved **DAC**. Flashing the new unit must be done with **DERBIGUM** material, per **DERBIGUM** published specifications.
4. Repairs performed or materials furnished by others must be authorized, in writing, by **DERBIGUM**, in advance or this guaranty shall be voided.
5. Never let other building trades onto your roof without cautioning them to treat the roof with care. This includes refraining from throwing or dropping tools onto the **DERBIGUM** system, or dragging sharp equipment across the roof. Care needs to be taken not to spill solvents or gasoline onto the roof.
6. If your roof contains pitch pans, all pitch pans must have the bottom two-thirds filled with a non-shrink grout and then the top portion topped off and crowned with PERFLASH® Modified Bitumen Based Cement or approved pourable sealer. Turn down the upper lip of the pitch pan to provide a better seal for the bitumen. **DERBIGUM** requires the addition of an umbrella rain cap where possible. **DERBIGUM** does not guaranty the performance of pitch pans as they are a maintenance item.
7. If your building is subject to significant roof traffic, **DERBIGUM** recommends the installation of walk treads. Consult **DERBIGUM** Technical Services for approved recommendations.
8. Do not fasten guide wires to your **DERBIGUM** membrane, instead anchor these devices on masonry or check with an approved **DAC** for recommendations.
9. Your **DAC**, or professional roofing consultant wants to serve you, but please do not call until you are reasonably sure the roof is the cause of a leak. Many costly inspections are made by your **DAC**, only to find the leak is caused by something other than the **DERBIGUM** system. To insure better service, please perform as thorough an investigation as possible before you call your **DAC**.



What To Look For During Your Roof Inspection

Gutters:

Gutters may be the cause of roof leaks. When inspecting your roof, clean debris from the gutters to ensure that water will flow down the gutters and off the roof into the down spouts. When debris collects in the gutters, water flow is restricted, causing the gutters to fill to the top and flow over the outside and back up into the roof system. When water backs up into the roof system problems can appear in different forms. The moisture may migrate between the membrane plies causing blisters on the roof, or leaks directly into the building.

Signs of full gutters:

Water draining off roof behind gutters and down the outside wall.



Downspouts:

During your Fall roof inspection, after the leaves have fallen is the best time to inspect gutters and downspouts.



Ponding Water:

Check for improper drainage from the roof.

Vegetation can grow if ponded water remains for long periods at a time.





Cap Flashings:

Cap flashings are metal or other rigid covers at membrane terminations, such as counterflashings, expansion joint covers and coping caps. When inspecting your roof's terminations look for:

Loose or missing fasteners, missing or loose joint covers, corrosion of metal components or cracking and aging sealants which can collect and direct water through an end joint.



Brick Coping Cap with aged and cracked sealant.



Termination Bar with fastener pull out.



Rusty Edge Metal deteriorating, allowing moisture to migrate into roof system.



Cracked concrete coping cap, allowing water to infiltrate the painted brick wall.



Skylight with membrane pulled away from counterflashing.



Membrane and counterflashing pulled away from brick wall.



Penetrations:

Penetrations are pipes, drains, screen wall supports, electrical conduits, duct work and curbs.

The improper addition of these roof penetrations after the original installation of the roof system can cause serious damage to the roof system or interior damage. Tenant-finish of the interior building space is a common source of improper additions. When additional penetrations are to be installed after the completion of the roof system, only approved roofing contractors are authorized to cut and seal the existing roofing system. These penetrations must be flashed properly using a **DERBIGUM** approved products, i.e. **DERBIFLASH** or derbigum standard flashing materials. When inspecting your roof's penetrations make sure that the drain clamping ring is properly secured to ensure a watertight seal and the drain dome is secured to the drain clamping ring bowl. Pitch pans need to be filled with a sufficient quantity of **PERFLASH**, approved pourable sealer, or if the pitch pan has an umbrella cap, it must have a tight seal at the top of the clamping ring with caulk. Check that the **DERBIGUM** membrane is adhered at the penetration flanges.



New wall penetrations have been added to these completed roof systems without the proper flashing details. Water will migrate into the walls and leak into the building.



The pitch pan grout has pulled away from the metal pan, it is time to fill the pan with **PERFLASH** or a pourable sealer.

This pipe thru the roof has been installed improperly and the building movement is pulling on the pipe, leaving a void at the roof penetration.



Proper reflashng with **DERBIFLASH** liquid flashing membrane will provide a long term seal to these penetrations.



Roof Top Equipment:

Roof top equipment may be the most commonly overlooked and potentially problematic maintenance item.

Equipment that is in disrepair has the potential to cause damage to the roof membrane. This unit's door has come off its hinges. Duct work problems such as missing bracing members, or connector bolts and fasteners will allow water seepage into the ducts and migration into the building. These conditions are often incorrectly attributed to a roof leak.



Coated Roofs:

The life span of roof coatings is from 3 to 5 years. This owner maintenance item is the easiest to detect. When inspecting your roof, look for cracks and wear on the coating. Areas that have pulled away from the sheet metal counter flashing may be caused from building movement or inadequately fastened metal flashing.



Coated roof pulled away from edge.



Cracked coated roof.



Worn coated roof surface.

Field Membrane:

When inspecting the field of the roof look for damage caused by: flying or rolling debris across the roof which causes damage to the membrane. Metal panels from roof top equipment placed on the field of the roof during inspection or repair can cause holes and gouges in the membrane.



Improper roof repair.



Gouges in a roof membrane.



Field Membrane: (continued)

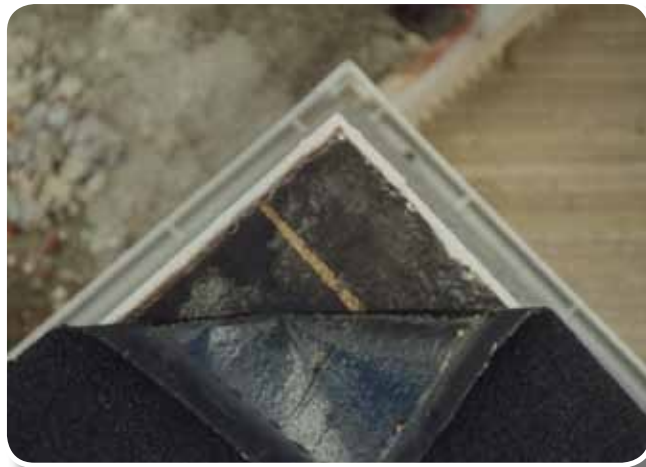
During your semi-annual inspections look for the following: splits, open laps, deteriorated membrane or surface coatings, adequate drainage, worn spots or holes in the membrane, fasteners backing out against the membrane, non-adhered areas, excessive wrinkles, blisters and ridges. When cleaning the field membrane, do not use a power washer on DERBICOLOR granulated roof surfaces.



Open lap at target patch at Vent Thru Roof.



Open lap at Roof Top Unit curb.



Loose membrane at roof edge.



Open lap.



Open lap at ridge.



MOST COMMON PROBLEMS

1. New Roof Penetrations
2. Holes & Punctures
3. Clogged Drains
4. Gutters, Downspouts & Scuppers
5. Open Laps
6. Loose Flashings
7. Loose Metal Counter-Flashings
8. Skylights, Smoke Hatches & Roof Hatches
9. Pitch Pans & Covers
10. Surface Contamination
11. Deteriorating Masonry Walls
12. Fastener Back-out
13. Sealant Joints (Old & Aged Caulking)
14. Soil Vents
15. Inside/Outside Corners



The following Chart is for your semi annual inspections.

	Date	Inspector	Repairs Required	Repair date	Roofing Contractor
1st Year					
Mid Yr.					
2nd Year					
Mid Yr.					
3rd Year					
Mid Yr.					
4th Year					
Mid Yr.					
5th Year					
Mid Yr.					
6th Year					
Mid Yr.					
7th Year					
Mid Yr.					
8th Year					
Mid Yr.					
9th Year					
Mid Yr.					
10th Year					
Mid Yr.					
11th Year					
Mid Yr.					
12th Year					
Mid Yr.					
13th Year					
Mid Yr.					
14th Year					
Mid Yr.					
15th Year					
Mid Yr.					
16th Year					
Mid Yr.					
17th Year					
Mid Yr.					
18th Year					
Mid Yr.					
19th Year					
Mid Yr.					
20th Year					
Mid Yr.					



Inspection Check List

G = Good, No Action			
F = Fair, Monitor Periodically			
P = Poor, Immediate Action			

	G	F	P	Area of Roof	Action Taken
Roof Top Units					
Access Panels Attached to Unit					
Condensation Pans Clear					
Liquid Discharge					
Proper Corner Flashing					
Properly Flashed to Roof					

Penetrations					
Pitch Pockets Filled					
Loose Flashing					
Drawbands on Umbrellas Tight					
Corrosion on Pipes					

Membrane Flashing					
Seam Attached to the field					
Punctures					
Fully Adhered					
Open Top Seal					

Sheet Metal Flashing					
Loose or Missing Fasteners					
Loose or Missing Metal					
Cracked Sealant					
Corrosion					

Gutters & Downspouts					
Clean Debris from Gutters					
Clean Debris from Downspouts					
Gutters Properly Attached					



G = Good, No Action			
F = Fair, Monitor Periodically			
P = Poor, Immediate Action			

	G	F	P	Area of Roof	Action Taken
Field of the Roof					
Ponded Water or Water Stains					
Debris					
Vegetation Growth					
Surface Coating: Cracked					
Membrane Cracking					
Membrane Punctured					
Membrane Unadhered					
Fasteners Backing Out					
Surface Contamination					

Walkways					
Unadhered Areas					
Deteriorated Areas					
Needed in Heavy Traffic Areas					

Laps					
Open Joints					
Fishmouths					
T-Laps					

Drains					
Strainers in Place					
Clamping Rings Tightened					
Clear of Debris					

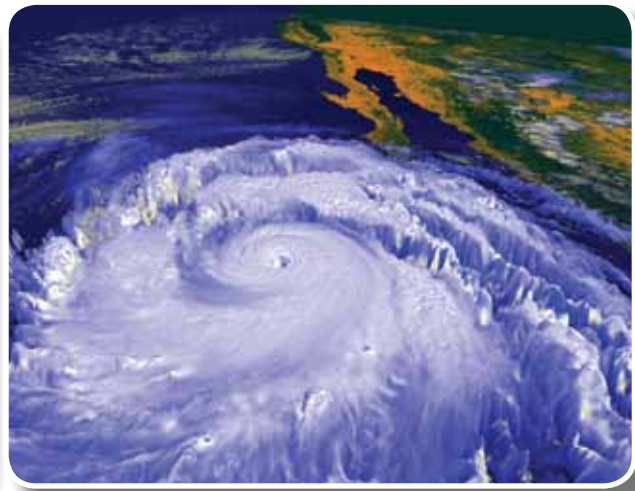
Gravel Stops					
Joint Conditions					
Rust/Deterioration					
Strip-In Membrane					



EMERGENCY REPAIRS

Severe Weather

Emergency repairs may be required after severe weather. In the event a **DERBIGUM Authorized Contractor (DAC)** is not readily available, and to minimize damage to the interior of the building and its contents, the building owner may elect to perform emergency repairs. In many cases, it may be extremely difficult to locate the source of a leak into the building. If the source cannot be located, the building owner may have no recourse except to control the spread of water until a **DAC** can be contacted and appropriate repairs completed.



These repairs should be considered temporary. A **DAC** should be contacted to follow-up with permanent repairs.

Check roof drains and scuppers to be certain that they are functional and clear of debris. Caution should be exercised when clearing debris from drains. Draining water, can create significant suction forces which can suck tools, hands or arms quickly into the drain.

It is generally not advisable to attempt repairs until after a storm because of the danger of high winds and the possibility of a lightning strike. Work should not be performed during high winds or electrical storms.

In some instances, however, emergency repairs during a storm may prevent or minimize further wind damage. If loose metal edge flashing is observed, securing it during a storm may prevent subsequent lifting, peeling and even blow-off of the membrane.



Split Membrane

The membrane surface must be cleaned and dried, then PERMASTIC or PERFLASH applied with a matching membrane (DERBIGUM or DERBICOLOR or DERBIBRITE) patch installed to the area. If these products are not available a polyurethane sealant will work until permanent repairs are performed by a **DAC**.

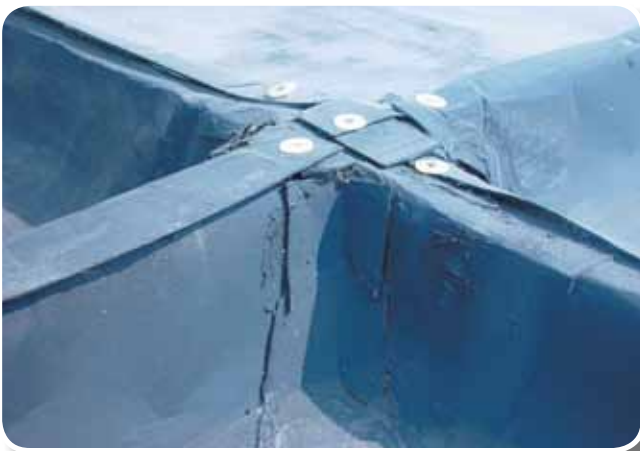
Leaks at Drains or Pitch Pans

Debris must be cleared away from drain area. The clamping ring must be checked and tightened down. Loose flashing laps must be repaired and PERFLASH applied at drain leads.

Pitch pans need to be filled with PERFLASH, insuring that the pipe penetration is completely surrounded. If there is an umbrella installed above the pan, the clamping ring must be secured and the top edge of the umbrella caulked with a polyurethane sealant. The area should be checked for loose flashing laps and repaired with PERMASTIC or PERFLASH and like membrane (DERBIGUM or DERBICOLOR or DERBIBRITE).



Leaks at Metal Flashings



Loose or missing fasteners must be tightened or replaced. Caulking at the metal cap flashing may crack with age, requiring the joints to be caulked with a polyurethane caulking. Building movement can cause the metal cap flashing to buckle creating open edges which can allow water to be funneled into a membrane end joint from where it migrates into the building. Look for exposed membrane end joints where this could occur. This picture depicts a control joint where the metal counter flashing was not fastened, and later blew off during high winds.



DERBIGUM®

MAKING BUILDINGS SMART

4800 Blue Parkway
Kansas City, MO 64130
Phone: 800.727.9872 / Fax: 816.924.1542
E-mail: INFO@DERBIGUM.COM • www.DERBIGUM.com

