

SUBJECT: Maintenance Schedule for Masonry

This document is based on BIA Tech Note 46 Maintenance of Brick Masonry, which is an excellent guide for maintenance of brickwork, except that some of the recommendations on maintenance of mortar and other wall elements is overly conservative. The tables and recommendations below are intended to correct some of the values in the BIA Tech Note with more realistic values based on premium quality mortar and other materials, when they are used on a project.

Generally, if brickwork is properly designed, detailed and constructed, it is very durable and requires little maintenance. However, many of the other components incorporated in the brickwork such as caps, copings, sills, lintels and sealant joints may require periodic inspection and repair. Neglecting maintenance of these components may lead to deterioration of other elements in the wall.

Maintenance of buildings may be broken into two general categories: 1) general inspection to identify potential problems with the performance of exterior walls; and 2) specific maintenance to correct problems which may develop. This *Technical Note* addresses both general and specific maintenance procedures. A checklist is provided for general inspections and specific repair techniques are described.

SUMMARY OF RECOMMENDATIONS:

- Perform periodic inspections, annually
- Determine moisture source before attempting repairs to correct moisture penetration
- Remove and replace torn or cracked sealants
- Quality mortar should not need repair or replacement
- Surface grout hairline cracks if visible from 20 feet
- repoint damaged or deteriorating mortar
- Repoint with prehydrated Type N, O or K mortar, mixed drier than for conventional masonry work
- Remove ivy and plant growth that contributes to moisture penetration or deterioration of brickwork
- Exercise care in opening existing or drilling new weeps, to ensure that flashing is not damaged
- Install a dampproof course if missing or required
- Install remedial anchors and ties in accordance with manufacturer's recommendations
- Inspect masonry and correct all deficiencies before application of external coating

• **TABLE 1**

• **Estimated Time to Repair Needed for Materials**

Material		Estimated Time to Repair
Fired Clay Brick	Masonry veneer on walls	More than 100 years
Gray concrete block	Cavity wall, single-wythe or veneer	More than 100 years
Type N portland-lime mortar	Mortar for masonry veneer	More than 100 years
Type S portland-lime mortar	Mortar for loadbearing masonry	More than 100 years
Galvalume Coping	Flashing 20-75	20 – 50 years, per manufacturer's warranty
Sealant s	Expansion Joints	5 – 50 years per manufacturer's warranty
Galvanized steel	Adjustable Anchors & Ties	15 – 50 years (less in corrosive environments)
PVC	Use	Not recommended. Less than 10 years
EPDM	Flashing	20 – 50 years, per manufacturer's warranty
Stainless steel	Flashing and Coping	More than 100 years
Uncoated copper	Flashing	Not recommended. Causes galvanic corrosion of dissimilar metal anchors.
Coated copper laminates	Flashing	
Paint	Appearance	3 – 10 years per manufacturer's warranty
Water Repellent Coatings	Dampproofing	5 – 10 years per manufacturer's warranty

Maintenance of buildings involves two general categories: 1) general inspection to identify potential problems with the performance of exterior walls; and 2) specific maintenance to correct problems which may develop. The checklist below is a guide for general inspection of masonry walls. Where repairs or maintenance are needed, BIA Tech Note 46 addresses both general and specific maintenance procedures.

**Table 2
Brick Masonry Inspection Checklist**

LOCATION		ITEM OR CONDITION	BUILDING ELEVATION			
			North	South	East	West
ABOVE GRADE WALLS	MASONRY VENEER OR SINGLE-WYTHE CONCRETE MASONRY	Cracked Units				
		Loose Units				
		Spalled Units				
		Hairline Cracks in Mortar				
		Deteriorated Mortar Joints				
		Missing or Clogged Weeps				
		Plant Growth				
		Deteriorated/Torn Sealants				
		Out-of-Plumb				
		Efflorescence				
		Stains				
		Water running out and lime runs				
		Water Penetration				
		CAPS, COPING, AND SILLS	Inadequate Slope			
	Cracked Units					
	Hairline Cracks in Mortar					
	Loose Joints					
	Open Joints					
	Out-of-Plumb					
	Drips Needed					
BELOW GRADE WALLS	FOUNDATION WALLS	Deteriorated Mortar Joints				
		Cracks				
		Separation from Flooring				
		Inadequate Drainage				
		Water Penetration				
	RETAINING WALLS	Spalled Units				
		Deteriorated Mortar Joints				
		Cracks				
		Out-of-Plumb				
		Dampness				
Water running out and lime runs						
ADJACENT SYSTEMS	OTHER ELEMENTS	Spalled Units				
		Gutters/Leaders				
		Roof Leaks into Walls				
		Seal at Adjacent Materials				
		Grade/Drainage				

Bibliography:

Durability data cited in this document has been cited from the following sources:

1. NCMA TEK 8-1A Maintenance of Concrete Masonry Walls, National Concrete Masonry Association, Herndon, VA, 2004.
2. BIA Tech Note 46 Maintenance of Brick Masonry, Brick Industry Association, December 2005.