MOSAIKON

Getty Conservation Institute   Getty Foundation   ICCM   ICCROM

TECHNICIAN TRAINING FOR THE CONSERVATION OF MOSAICS

PART 1
THE CONSERVATION OF IN SITU MOSAICS

Stabilization

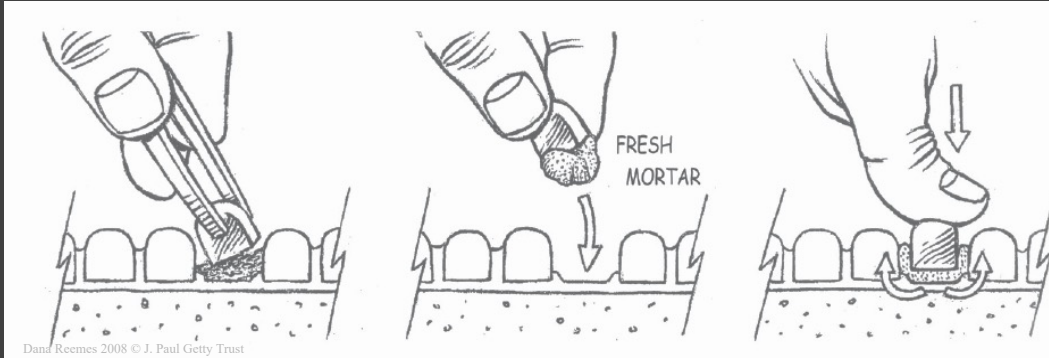Livia Alberti, Ermanno Carbonara, Thomas Roby

Stabilization

The aim of stabilization interventions is to restore the structural stability of the mosaics and prevent any new deterioration from occurring.
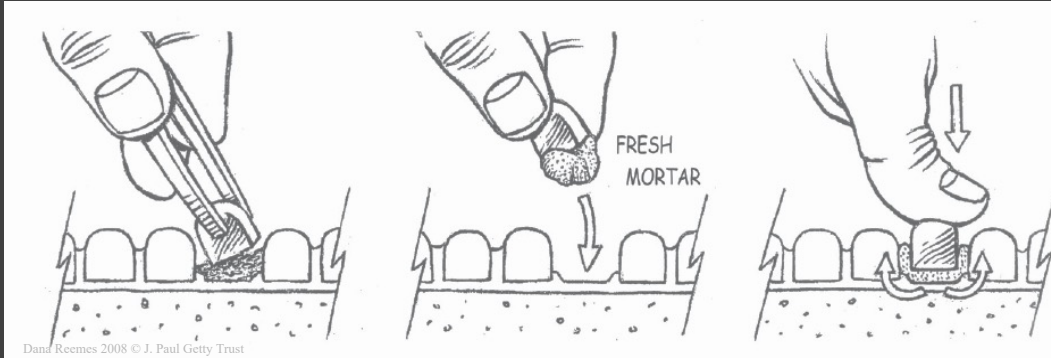
Main stabilization interventions:

• Resetting detached tesserae in their original position and orientation

• Filling of interstices between tesserae

• Infilling of lacunae

• Edging repairs

• Grouting of voids between mosaic preparatory layers

Resetting tesserae

Dana Reemes 2008 © J. Paul Getty Trust

FRESH MORTAR

Ermanno Carbonara 2008 © J. Paul Getty Trust

Livia Alberti 2006 © J. Paul Getty Trust

Temporarily removing detached tesserae to a bedding of sand

Resetting tesserae

Resetting tesserae into their original location

Resetting tesserae into their original location

Applying labels to mark the re-set tesserae

Type of mortar
Lime-rich with fine aggregates.
Good adhesion properties and malleable.

Binder : aggregate ratio
1 : 1

Examples of formulas:
1 lime putty
½ sand ....0 – 0.5 mm
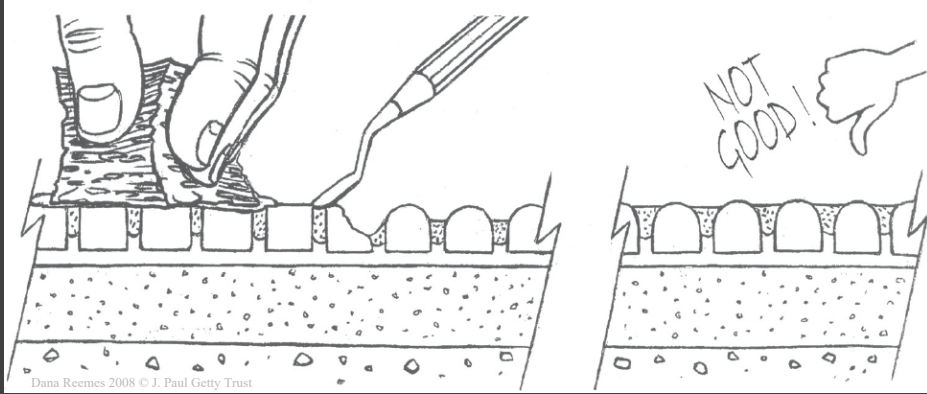½ gravel .... 0 – 0.5 mm
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1 lime putty
½ sand ....0 – 0.5 mm
½ brick powder ......0 – 1 mm

Filling of interstices between tesserae

Dana Reemes 2008 © J. Paul Getty Trust

Sebastiaan Godts 2010 © J. Paul Getty Trust

Filling of interstices with mortar

Sebastiaan Godts 2010 © J. Paul Getty Trust

Removing excess mortar from the surface

Ermanno Carbonara 2011 © J. Paul Getty Trust
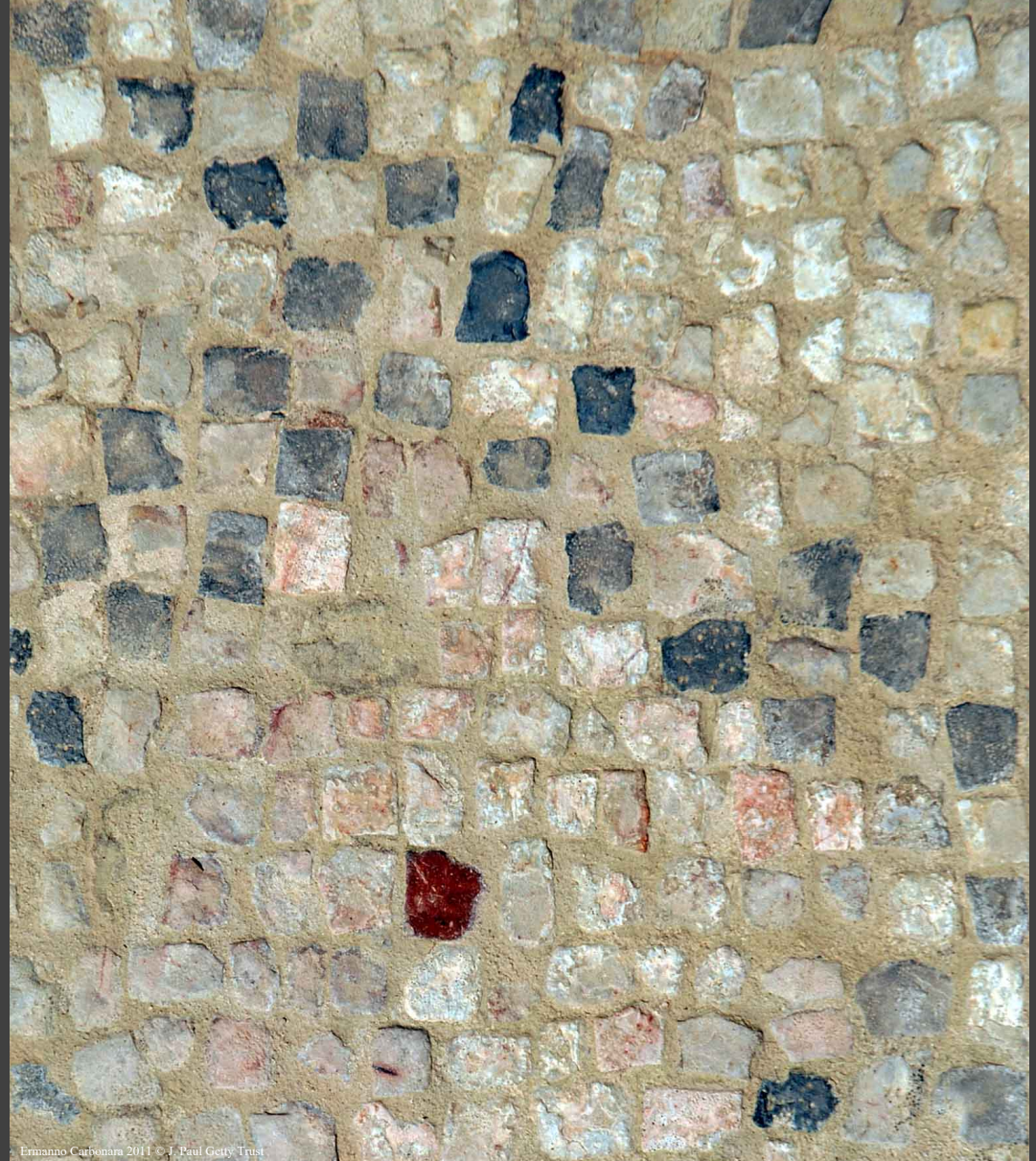
After filling of interstices

Filling of interstices between tesserae

Type of mortar

Non-hydraulic or slightly hydraulic with fine aggregates.
Malleable, not very hard and of a color similar to the mosaic.

Binder : aggregate ratio

1 : 2

Examples of formulas:

1 lime putty
1 yellow sand............0 – 0.5 mm
1 beige gravel...............0 – 1 mm

½ lime putty
½ hydraulic lime
1 white sand............0 – 1 mm
1 yellow gravel.....0 – 2 mm
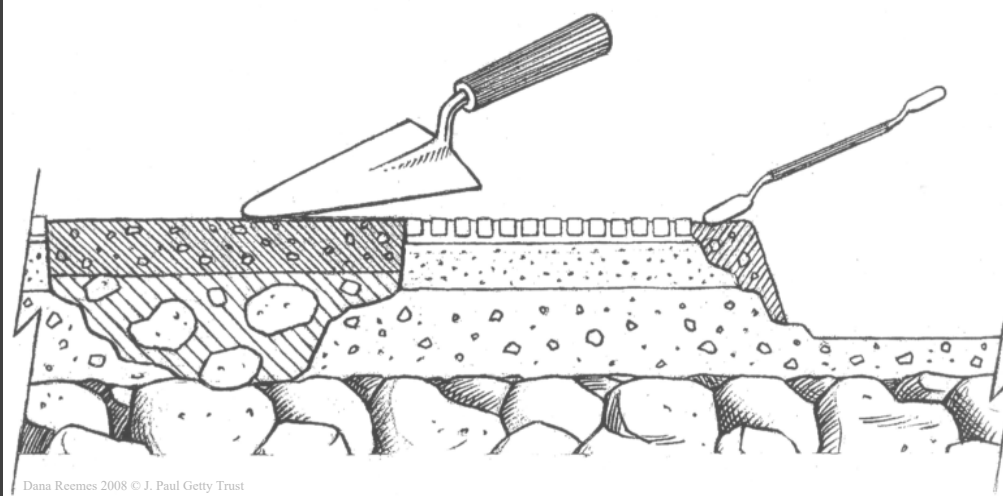
Applying the first layer of mortar

Treatment of the surface for good attachment
to the second layer

Type of mortar

PREPARATORY LAYER

Non-hydraulic or hydraulic mortar with large aggregates to improve resistance and lessen shrinkage and cracking.

Binder : aggregate ratio

1 : 2.5

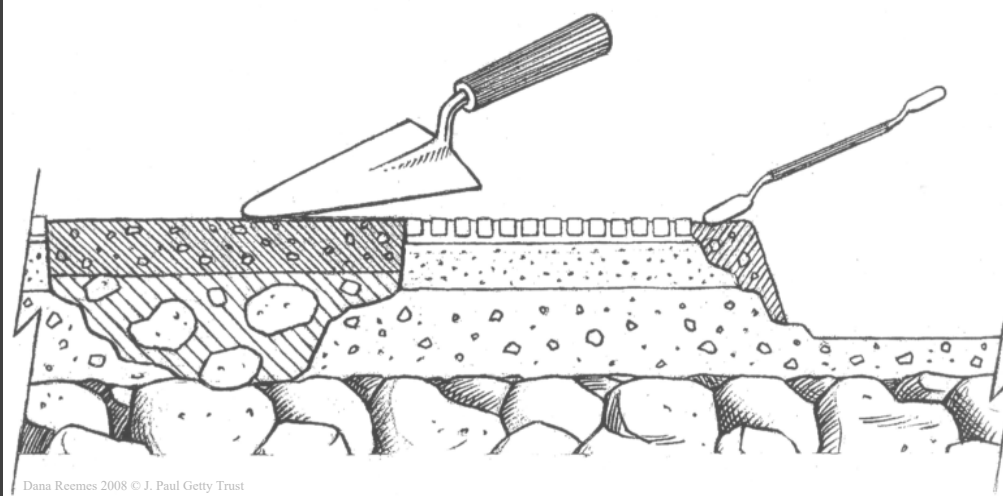### Example of formula:

1 lime putty
1 hydraulic lime

1½ sand .... 0 – 1 mm
1½ gravel .... 1 – 4 mm
1 brick powder............ 0 – 0.5 mm
1 crushed brick............ 5 – 10 mm

Infilling of lacunae

Dana Reemes 2008 © J. Paul Getty Trust

Ermanno Carbonara 2009 © J. Paul Getty Trust

Application of surface layer of mortar

Scott Warren 2011 © J. Paul Getty Trust

Infilling of lacunae

Dana Reemes 2008 © J. Paul Getty Trust

Livia Alberti 2006 © J. Paul Getty Trust

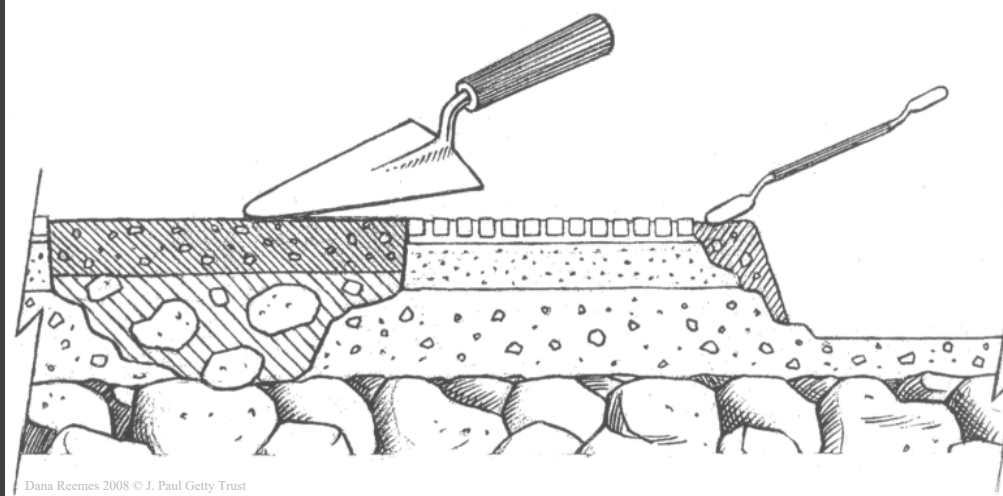Ermanno Carbonara 2009 © J. Paul Getty Trust

Removal of surface lime with sponge and clean water before the mortar has set
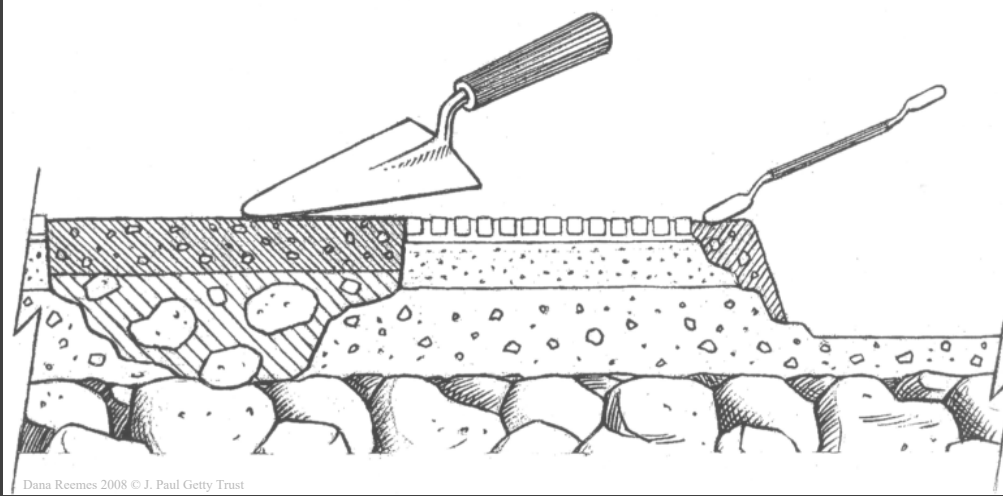
Infilling of lacunae

Dana Reemes 2008 © J. Paul Getty Trust

Ermanno Carbonara 2011 © J. Paul Getty Trust

Ermanno Carbonara 2011 © J. Paul Getty Trust

Ermanno Carbonara 2011 © J. Paul Getty Trust

Ensuring slow drying of the mortar with application of damp cloths and plastic sheeting

Edging repairs

Dana Reemes 2008 © J. Paul Getty Trust

Livia Alberti 2006 © J. Paul Getty Trust

Mosaic edges protected with mortar

Livia Alberti 2008 © J. Paul Getty Trust

Infilling of lacunae and edging repairs

Type of mortar

Infilling of lacunae SURFACE LAYER and edging repairs.
Non-hydraulic or hydraulic with medium-sized aggregates, well graded and of appropriate colors.
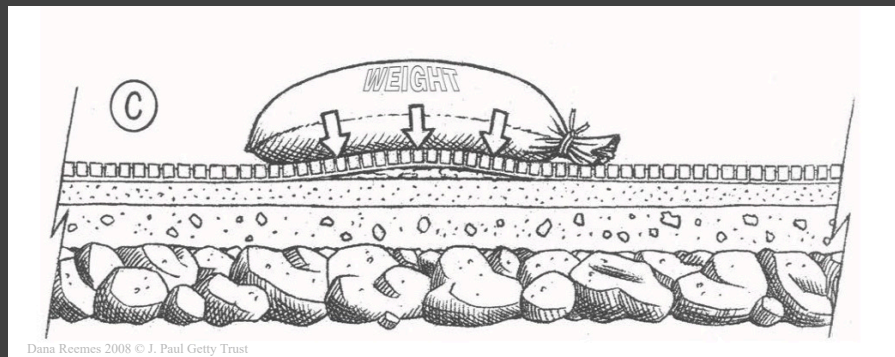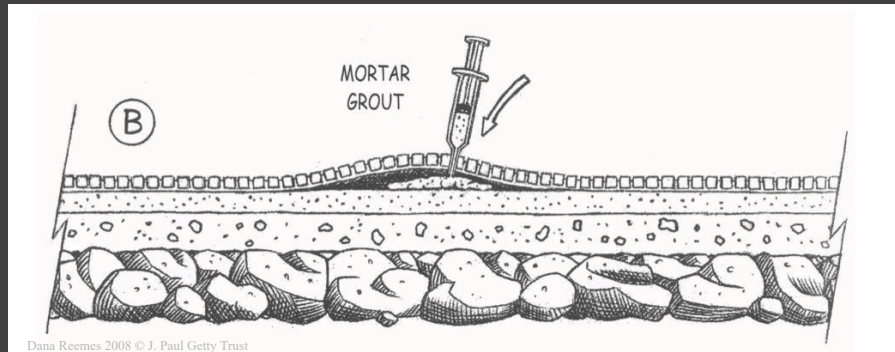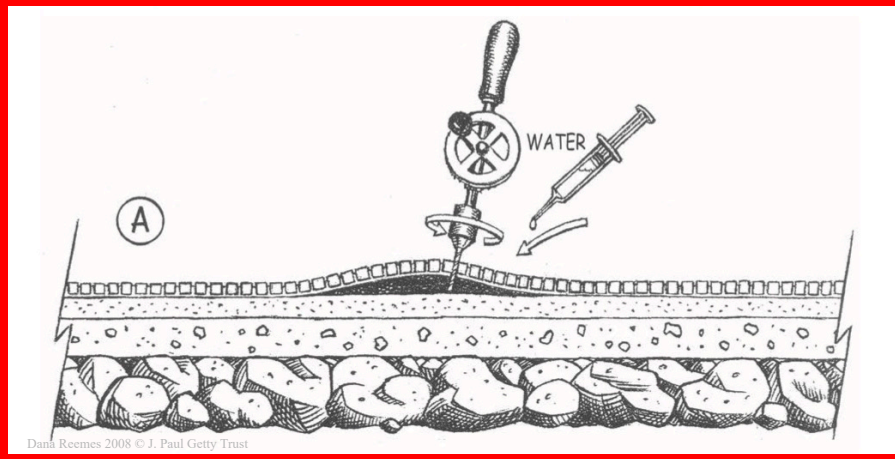
Binder : aggregate ratio
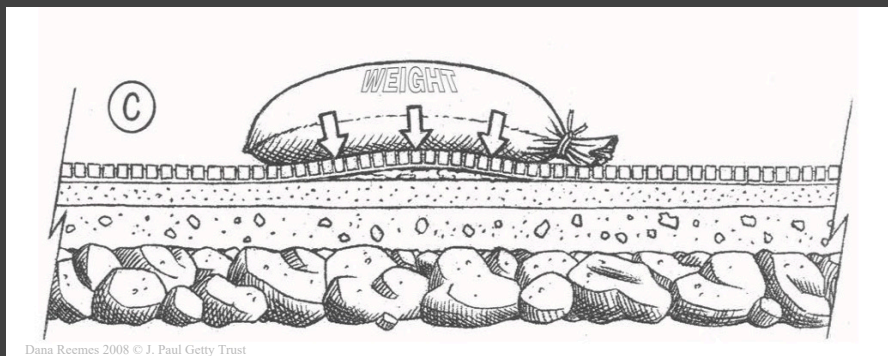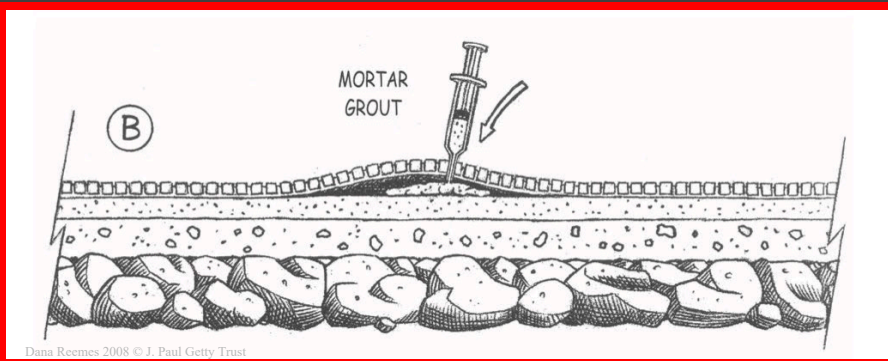
1 : 2.5

Example of formula:

2 lime putty

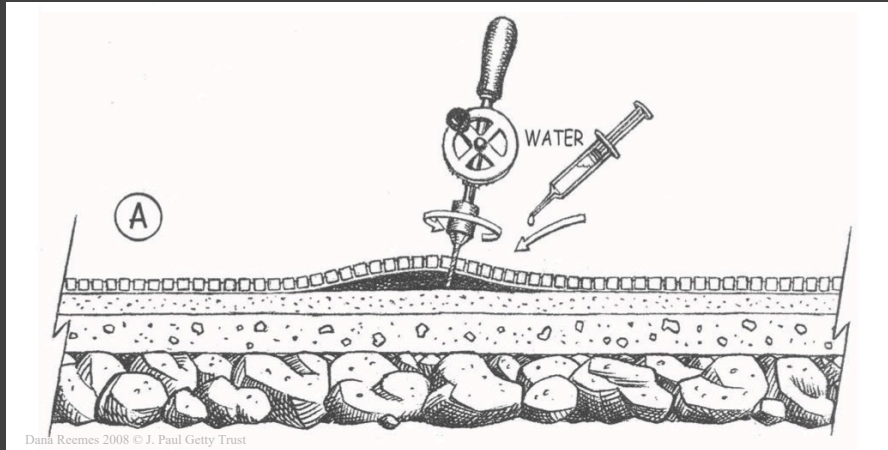1 white sand............................0 – 1 mm
1 beige gravel ....0 – 1 mm
1 beige gravel...........................1 – 4 mm
1 washed black gravel ....1 – 3 mm
1 crushed brick.......................2 – 3 mm
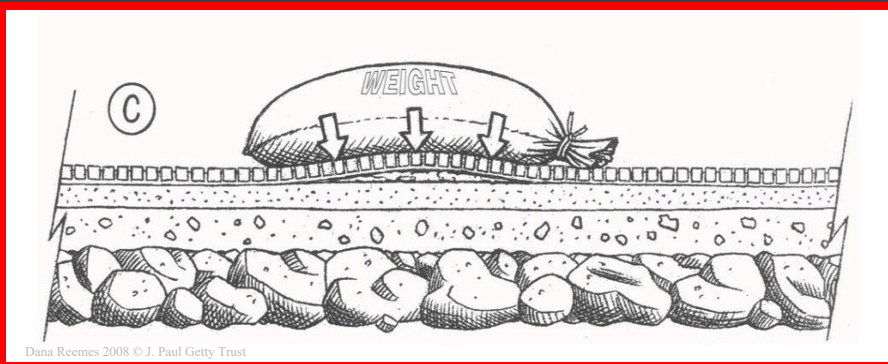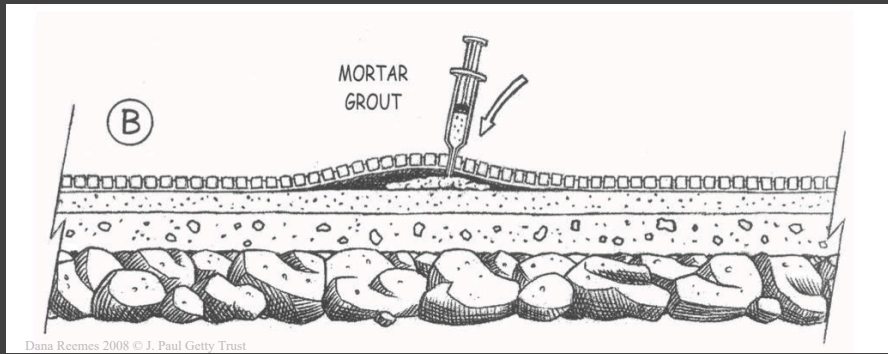
Grouting of voids between mosaic preparatory layers

Grouting of voids between mosaic preparatory layers

A — WATER
Dana Reemes 2008 © J. Paul Getty Trust

B — MORTAR GROUT
Dana Reemes 2008 © J. Paul Getty Trust

C — WEIGHT
Dana Reemes 2008 © J. Paul Getty Trust

Sebastinan Godts 2010 © J. Paul Getty Trust

Ermanno Carbonara 2014 © J. Paul Getty Trust

Grouting of voids between mosaic preparatory layers

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Sebastiaan Godts 2010 © J. Paul Getty Trust
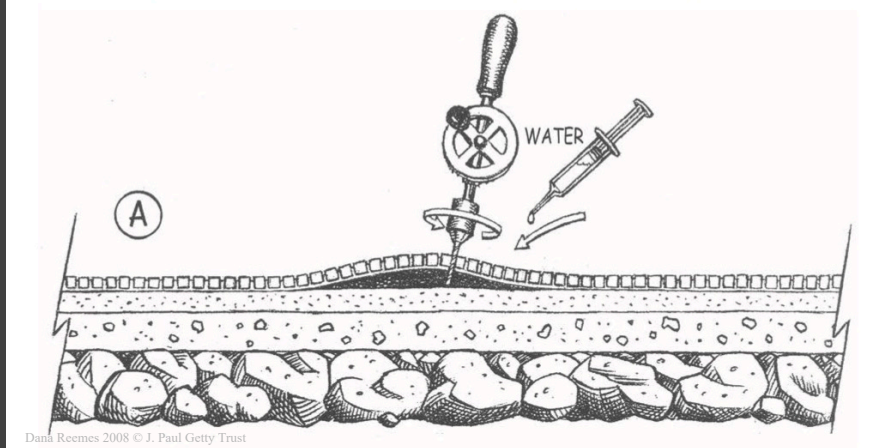
Grouting of voids between mosaic preparatory layers

Type of mortar
Liquid hydraulic mortar with very fine aggregate and a larger quantity of water.

Binder : aggregate ratio
1 : 1

Example of formula:
1 hydraulic lime

1 stone powder..............0 – 0.25 mm

MOSAIKON is a partnership of four institutions: the Getty Conservation Institute, the Getty Foundation, ICCROM, and ICCM. The aims of the project are to strengthen the network of professionals concerned with the conservation, restoration, maintenance, and management of mosaic heritage in the southern and eastern Mediterranean region; provide training to a variety of individuals involved in mosaics conservation and, more generally, with the management of archaeological sites and museums with mosaics; work with national and international bodies to provide a more favorable legislative, regulatory, and economic environment for the conservation of mosaics in the Mediterranean; and promote the dissemination and exchange of information.