

# CS 499

## Material dataset markup

March 13, 2014

**José Vicente Ruiz Cepeda**  
`<ruizcep2@illinois.edu>`

## Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Methodology</b>	<b>2</b>
<b>3</b>	<b>Markup</b>	<b>2</b>
3.1	Birch . . . . .	2
3.2	Brick . . . . .	6
3.3	Concrete . . . . .	9
3.4	Corduroy . . . . .	12
3.5	Denim . . . . .	15
3.6	Elm . . . . .	18
3.7	Feathers . . . . .	22
3.8	Fur . . . . .	25
3.9	Hair . . . . .	28
3.10	KnitAran . . . . .	32
3.11	KnitGuernsey . . . . .	35
3.12	Leather . . . . .	39
3.13	Marble . . . . .	42
3.14	Scale . . . . .	45
3.15	Silk . . . . .	48
3.16	Slate . . . . .	51
3.17	Stucco . . . . .	54
3.18	Velour . . . . .	57

# 1 Introduction

This first assignment consists on the markup of a material dataset with several properties. The dataset comes from [?] and is composed of eighteen material categories, each one with twelve different sample images in PNG format with resolutions lower than 400 x 400 pixels.

## 2 Methodology

The procedure to mark each of the material images consists on defining its shape and touch for the *fine*, *medium* and *coarse* scale, being its possible values the following ones:

- **Shape:** *flat*<sup>1</sup>, *round*, *extended organized* and *extended disorganized*.
- **Touch:** *furry*, *feathery*, *coarse*, *rough*<sup>1</sup>, *bumpy*, *scratchy*, *smooth* and *velvety*<sup>1</sup>.

## 3 Markup

### 3.1 Birch

Coarse scale is considered the picture itself, while medium scale is a part where the horizontal pattern is not present, and fine scale a little spot in the medium scale.



**Birch 01:**

- **Fine:** *flat*, *coarse*.
- **Medium:** *extended disorganized*, *scratchy*.
- **Coarse:** *extended organized*, *scratchy*.



**Birch 02:**

- **Fine:** *flat*, *coarse*.
- **Medium:** *flat*, *coarse*.
- **Coarse:** *extended disorganized*, *scratchy*.

---

<sup>1</sup>New value.

**Birch 03:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, scratchy.*
- **Coarse:** *extended organized, scratchy.*

**Birch 04:**

Watermark and big crack.

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, scratchy.*
- **Coarse:** *round, coarse.*

**Birch 05:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended organized, scratchy.*

Considering for the medium scale the part without horizontal lines.

**Birch 06:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, scratchy.*
- **Coarse:** *extended organized, scratchy.*

**Birch 07:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*

**Birch 08:**

Watermark.

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, scratchy.*
- **Coarse:** *extended organized, scratchy.*

**Birch 09:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, scratchy.*
- **Coarse:** *extended disorganized, scratchy.*

**Birch 10:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, scratchy.*
- **Coarse:** *extended organized, scratchy.*

**Birch 11:**

Big crack.

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, scratchy.*
- **Coarse:** *round, scratchy.*

**Birch 12:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, scratchy.*
- **Coarse:** *extended organized, scratchy.*

### 3.2 Brick



#### Brick 01:

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*



#### Brick 02:

- **Fine:** *flat, scratchy.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*

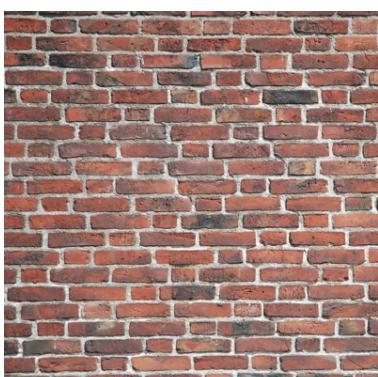
Considering as fine scale the mortar.



#### Brick 03:

- **Fine:** *flat, scratchy.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended organized, scratchy.*

Considering as fine scale the mortar.



#### Brick 04:

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*

**Brick 05:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*

Might also be considered bumpy at coarse and medium scale?

**Brick 06:**

Graffiti.

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, smooth.*

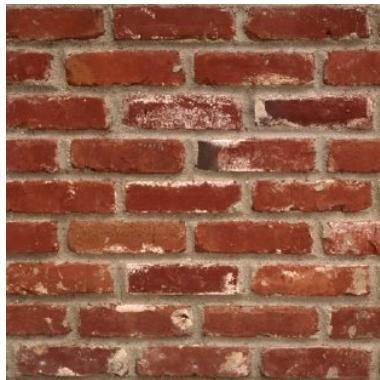
Considering as fine scale the mortar.

**Brick 07:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*

**Brick 08:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended organized, bumpy.*

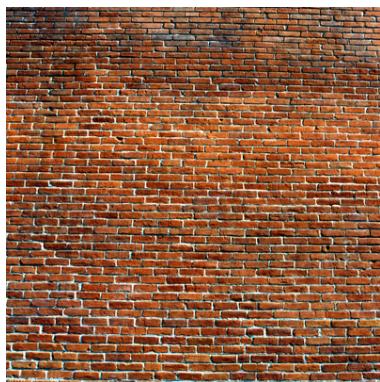
**Brick 09:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*

**Brick 10:**

- **Fine:** *flat, scratchy.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*

Considering as fine scale the mortar.

**Brick 11:**

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*

**Brick 12:**

- **Fine:** *flat, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, bumpy.*

### 3.3 Concrete



**Concrete 01:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *flat, coarse.*



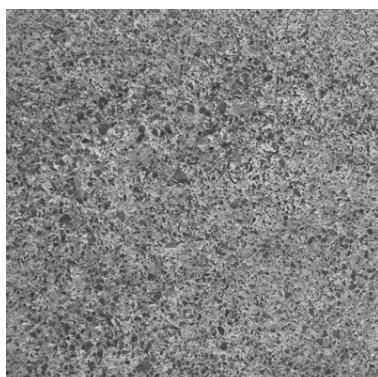
**Concrete 02:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended disorganized, coarse.*



**Concrete 03:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended disorganized, bumpy.*



**Concrete 04:**

- **Fine:** *flat, scratchy.*
- **Medium:** *flat, scratchy.*
- **Coarse:** *flat, scratchy.*

**Concrete 05:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended organized, coarse.*

**Concrete 06:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended organized, coarse.*

Considering that the almost straight break is organized.

**Concrete 07:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *round, scratchy.*

Considering the spots of different colours to determine a round shape.

**Concrete 08:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *flat, coarse.*

Considering that the patterns in the middle of the image don't affect the shape.

**Concrete 09:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *flat, coarse.*

**Concrete 10:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended disorganized, coarse.*

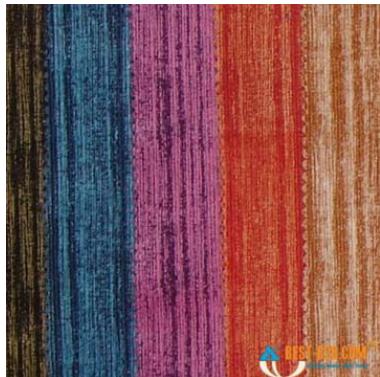
**Concrete 11:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, scratchy.*
- **Coarse:** *flat, scratchy.*

**Concrete 12:**

- **Fine:** *flat, scratchy.*
- **Medium:** *flat, scratchy.*
- **Coarse:** *flat, scratchy.*

### 3.4 Corduroy



#### Corduroy 01:

Logo in the right bottom corner.

- **Fine:** *extended organized, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, bumpy.*



#### Corduroy 02:

- **Fine:** *flat, velvety.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

Considering that the perpendicular direction of the lines makes them disorganized.



#### Corduroy 03:

- **Fine:** *flat, smooth.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

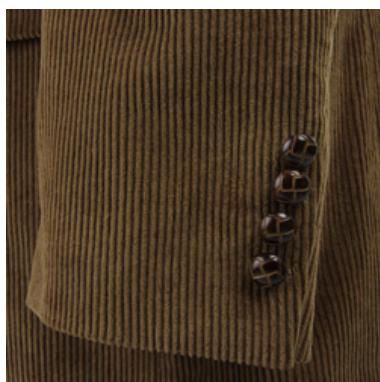


#### Corduroy 04:

- **Fine:** *flat, smooth.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

**Corduroy 05:**

- **Fine:** *flat, velvety.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

**Corduroy 06:**

- **Fine:** *flat, velvety.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *round, bumpy.*

Considering the buttons as part of the coarse scale.

**Corduroy 07:**

- **Fine:** *flat, velvety.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended organized, bumpy.*

**Corduroy 08:**

Logo in the bottom left corner.

- **Fine:** *flat, velvety.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended organized, bumpy.*



### Corduroy 09:

- **Fine:** *flat, velvety.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended organized, bumpy.*



### Corduroy 10:

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *round, bumpy.*

Considering the figures of the bottom left corner for the coarse scale.



### Corduroy 11:

- **Fine:** *flat, velvety.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended organized, bumpy.*



### Corduroy 12:

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *round, bumpy.*

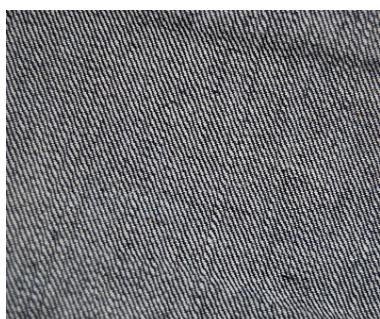
Considering the flower for the coarse scale.

### 3.5 Denim



#### Denim 01:

- **Fine:** *extended organized, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, smooth.*



#### Denim 02:

- **Fine:** *extended organized, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, smooth.*



#### Denim 03:

- **Fine:** *extended organized, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, bumpy.*



#### Denim 04:

- **Fine:** *extended organized, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Denim 05:**

- **Fine:** *extended organized, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, smooth.*

**Denim 06:**

- **Fine:** *round, smooth.*
- **Medium:** *round, smooth.*
- **Coarse:** *round, smooth.*

**Denim 07:**

- **Fine:** *extended organized, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

**Denim 08:**

Watermark.

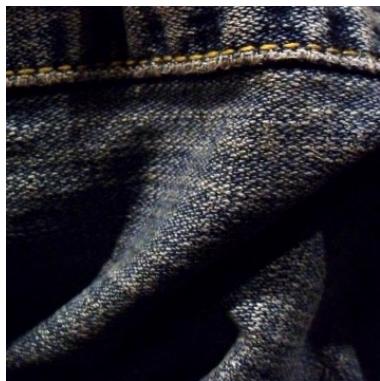
- **Fine:** *extended organized, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, smooth.*

**Denim 09:**

- **Fine:** *round, smooth.*
- **Medium:** *round, smooth.*
- **Coarse:** *round, smooth.*

**Denim 10:**

- **Fine:** *extended organized, smooth.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Denim 11:**

- **Fine:** *round, smooth.*
- **Medium:** *round, smooth.*
- **Coarse:** *round, bumpy.*

**Denim 12:**

- **Fine:** *round, smooth.*
- **Medium:** *round, smooth.*
- **Coarse:** *round, bumpy.*

### 3.6 Elm



#### Elm 01:

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

Considering the bark to be disorganized.



#### Elm 02:

- **Fine:** *flat, coarse.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*



#### Elm 03:

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*



#### Elm 04:

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

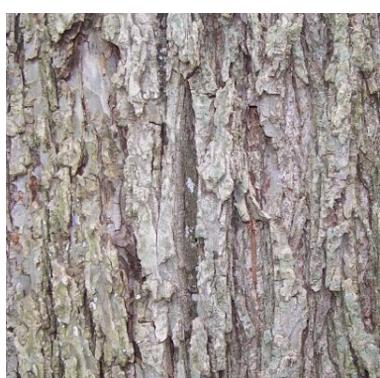
**Elm 05:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

**Elm 06:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended organized, bumpy.*

Considering the bark as organized.

**Elm 07:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

**Elm 08:**

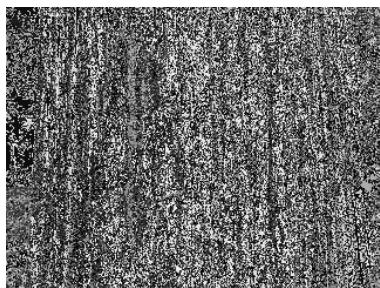
- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

**Elm 09:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

**Elm 10:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended disorganized, bumpy.*

**Elm 11:**

Extremely low quality image.

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

**Elm 12:**

- **Fine:** *flat, coarse.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

### 3.7 Feathers



#### Feathers 01:

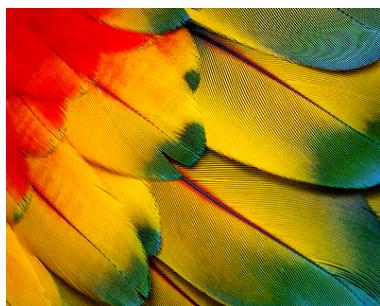
Watermark.

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *round, feathery.*



#### Feathers 02:

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *round, feathery.*



#### Feathers 03:

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *round, feathery.*



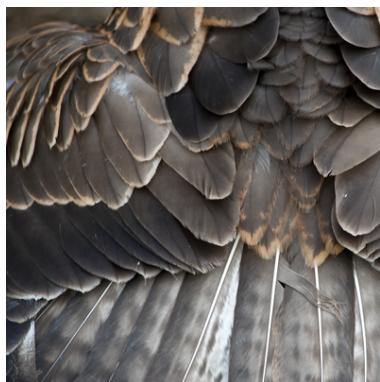
#### Feathers 04:

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended disorganized, feathery.*

**Feathers 05:**

Watermark.

- **Fine:** *extended organized, bumpy.*
- **Medium:** *round, feathery.*
- **Coarse:** *round, feathery.*

**Feathers 06:**

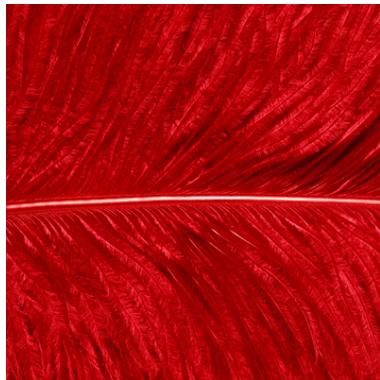
- **Fine:** *flat, smooth.*
- **Medium:** *round, feathery.*
- **Coarse:** *round, feathery.*

**Feathers 07:**

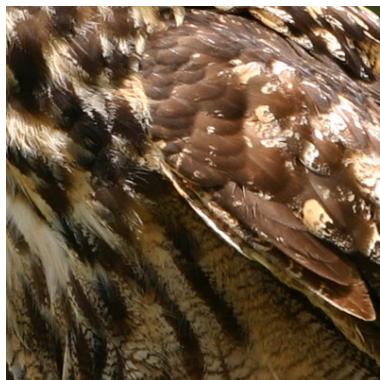
- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended disorganized, feathery.*
- **Coarse:** *extended disorganized, feathery.*

**Feathers 08:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended disorganized, feathery.*

**Feathers 09:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, bumpy.*
- **Coarse:** *extended disorganized, feathery.*

**Feathers 10:**

- **Fine:** *flat, smooth.*
- **Medium:** *round, feathery.*
- **Coarse:** *round, feathery.*

Considering the wing for the medium scale.

**Feathers 11:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, feathery.*
- **Coarse:** *extended organized, feathery.*

**Feathers 12:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *round, feathery.*
- **Coarse:** *round, feathery.*

### 3.8 Fur

Considering that the pattern that follows the fur is, at least, at low scale, organized.



#### Fur 01:

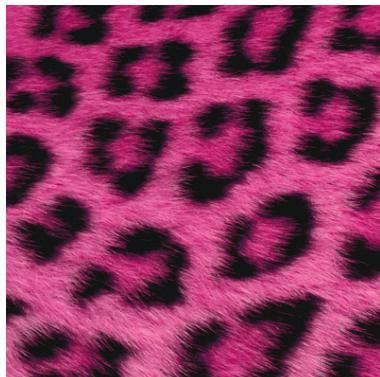
Watermark.

- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *extended disorganized, furry.*



#### Fur 02:

- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *extended disorganized, furry.*



#### Fur 03:

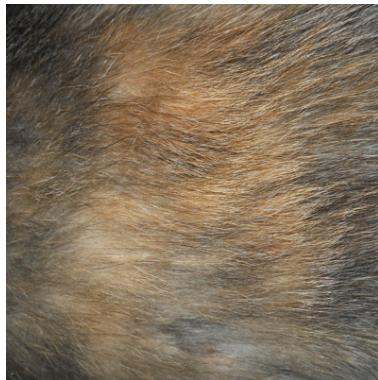
- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *round, furry.*

Considering the spots as elements of round shape.



#### Fur 04:

- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *extended organized, furry.*

**Fur 05:**

- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *extended disorganized, furry.*

**Fur 06:**

- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *extended disorganized, furry.*

**Fur 07:**

- **Fine:** *extended organized, furry.*
- **Medium:** *extended disorganized, furry.*
- **Coarse:** *extended disorganized, furry.*

**Fur 08:**

- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *extended disorganized, furry.*

**Fur 09:**

- **Fine:** *extended organized, furry.*
- **Medium:** *extended disorganized, furry.*
- **Coarse:** *extended disorganized, furry.*

**Fur 10:**

- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *extended disorganized, furry.*

**Fur 11:**

Same as Fur 03 with different color.

- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *round, furry.*

**Fur 12:**

- **Fine:** *extended organized, furry.*
- **Medium:** *extended organized, furry.*
- **Coarse:** *extended disorganized, furry.*

### 3.9 Hair

Considering that the touch of hair is smooth at a high scale.



#### Hair 01:

Watermark.

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, smooth.*



#### Hair 02:

Watermark.

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended disorganized, smooth.*
- **Coarse:** *extended disorganized, smooth.*



#### Hair 03:

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

**Hair 04:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

**Hair 05:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, smooth.*

**Hair 06:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, smooth.*

**Hair 07:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

**Hair 08:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended disorganized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

**Hair 09:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

**Hair 10:**

Watermark.

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

**Hair 11:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended organized, smooth.*

**Hair 12:**

- **Fine:** *extended organized, bumpy.*
- **Medium:** *extended organized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

### 3.10 KnitAran

Considering that non-linear patterns are disorganized.



#### KnitAran 01:

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*



#### KnitAran 02:

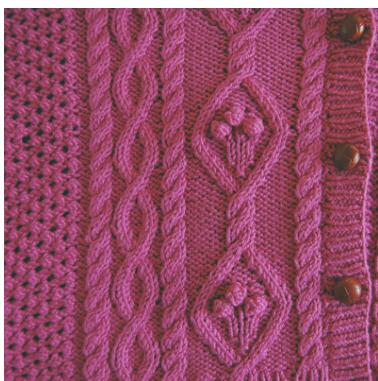
- **Fine:** *extended disorganized, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*



#### KnitAran 03:

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

Considering that the round parts of the pattern are extended disorganized.



#### KnitAran 04:

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *round, bumpy.*

Considering the buttons at the coarse level.

**KnitAran 05:**

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *round, bumpy.*

**KnitAran 06:**

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *round, bumpy.*

**KnitAran 07:**

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*

**KnitAran 08:**

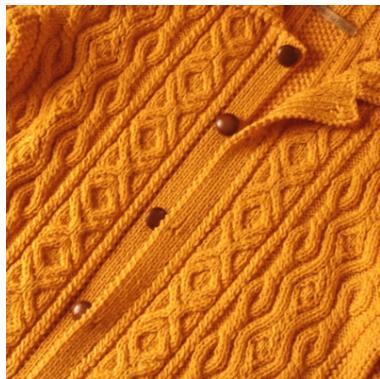
- **Fine:** *extended disorganized, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*

**KnitAran 09:**

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

**KnitAran 10:**

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*

**KnitAran 11:**

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *round, bumpy.*

Considering the buttons at the coarse level.

**KnitAran 12:**

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended disorganized, bumpy.*
- **Coarse:** *extended disorganized, bumpy.*

### 3.11 KnitGuernsey

Considering that non-linear patterns are disorganized.



#### KnitGuernsey 01:

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*



#### KnitGuernsey 02:

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

Ignoring the table behind.



#### KnitGuernsey 03:

- **Fine:** *round, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *extended disorganized, bumpy.*



### KnitGuernsey 04:

- **Fine:** *round, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *extended organized, bumpy.*



### KnitGuernsey 05:

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*



### KnitGuernsey 06:

- **Fine:** *extended disorganized, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*



### KnitGuernsey 07:

- **Fine:** *round, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*



### KnitGuernsey 08:

- **Fine:** *extended organized, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*



### KnitGuernsey 09:

- **Fine:** *round, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *extended disorganized, bumpy.*



### KnitGuernsey 10:

- **Fine:** *round, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *extended disorganized, bumpy.*



### KnitGuernsey 11:

- **Fine:** *round, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *extended disorganized, bumpy.*

**KnitGuernsey 12:**

- **Fine:** *round, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*

### 3.12 Leather



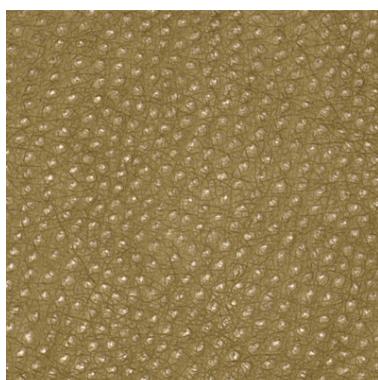
**Leather 01:**

- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*



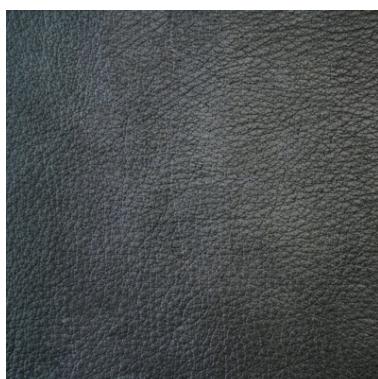
**Leather 02:**

- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*



**Leather 03:**

- **Fine:** *round, coarse.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*



**Leather 04:**

- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Leather 05:**

- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

Same as leather 04.

**Leather 06:**

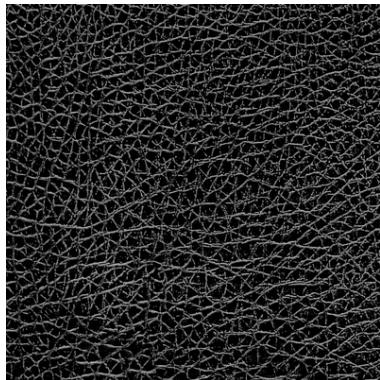
- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Leather 07:**

- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Leather 08:**

- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Leather 09:**

- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Leather 10:**

- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Leather 11:**

- **Fine:** *round, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *extended organized, bumpy.*

**Leather 12:**

- **Fine:** *round, coarse.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

### 3.13 Marble



**Marble 01:**

- **Fine:** *flat, smooth.*
- **Medium:** *extended disorganized, smooth.*
- **Coarse:** *extended disorganized, smooth.*



**Marble 02:**

- **Fine:** *flat, smooth.*
- **Medium:** *extended disorganized, smooth.*
- **Coarse:** *extended disorganized, smooth.*



**Marble 03:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended disorganized, coarse.*



**Marble 04:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

**Marble 05:**

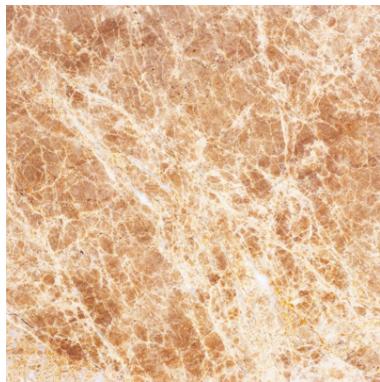
- **Fine:** *flat, smooth.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

**Marble 06:**

- **Fine:** *extended disorganized, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

**Marble 07:**

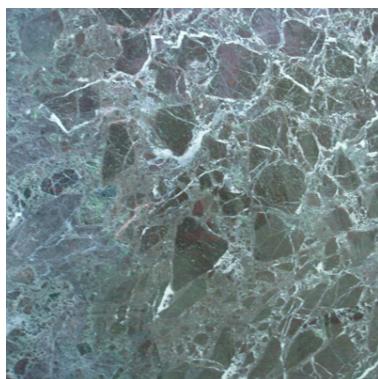
- **Fine:** *extended disorganized, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

**Marble 08:**

- **Fine:** *extended disorganized, smooth.*
- **Medium:** *extended disorganized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

**Marble 09:**

- **Fine:** *round, smooth.*
- **Medium:** *round, smooth.*
- **Coarse:** *round, smooth.*

**Marble 10:**

- **Fine:** *flat, smooth.*
- **Medium:** *extended disorganized, smooth.*
- **Coarse:** *round, smooth.*

**Marble 11:**

- **Fine:** *round, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *round, coarse.*

**Marble 12:**

- **Fine:** *flat, smooth.*
- **Medium:** *extended disorganized, smooth.*
- **Coarse:** *extended disorganized, smooth.*

### 3.14 Scale



#### Scale 01:

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*



#### Scale 02:

- **Fine:** *flat, coarse.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*



#### Scale 03:

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*



#### Scale 04:

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Scale 05:**

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Scale 06:**

Watermark.

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Scale 07:**

Watermark.

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Scale 08:**

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Scale 09:**

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Scale 10:**

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Scale 11:**

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

**Scale 12:**

- **Fine:** *flat, smooth.*
- **Medium:** *round, bumpy.*
- **Coarse:** *round, bumpy.*

### 3.15 Silk



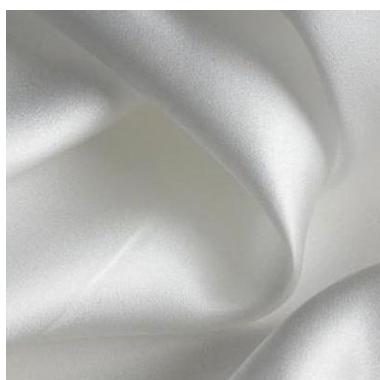
#### Silk 01:

- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*



#### Silk 02:

- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*



#### Silk 03:

- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*



#### Silk 04:

- **Fine:** *extended organized, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Silk 05:**

- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Silk 06:**

- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Silk 07:**

- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Silk 08:**

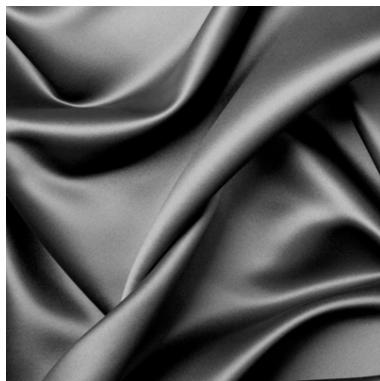
- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Silk 09:**

- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Silk 10:**

- **Fine:** *extended organized, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Silk 11:**

- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

**Silk 12:**

- **Fine:** *flat, smooth.*
- **Medium:** *flat, smooth.*
- **Coarse:** *extended disorganized, bumpy.*

### 3.16 Slate



#### Slate 01:

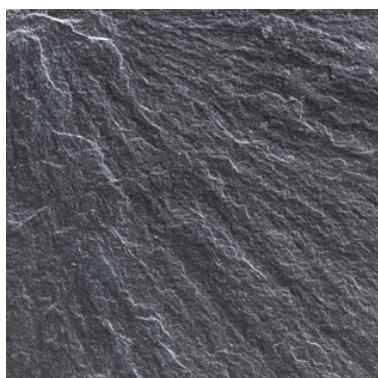
- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*



#### Slate 02:

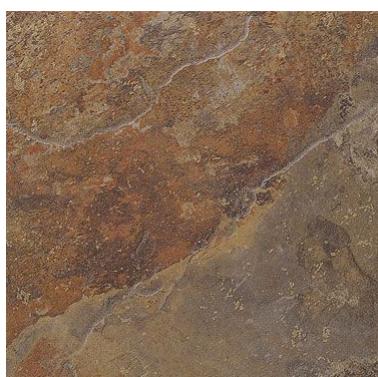
?

- **Fine:** *flat, coarse.*
- **Medium:** *extended organized, coarse.*
- **Coarse:** *extended organized, coarse.*



#### Slate 03:

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*



#### Slate 04:

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended disorganized, coarse.*

**Slate 05:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

**Slate 06:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

**Slate 07:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, bumpy.*

**Slate 08:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *flat, coarse.*

**Slate 09:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

**Slate 10:**

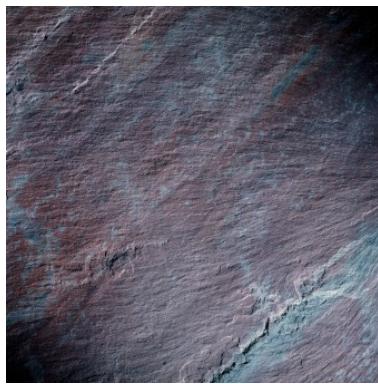
- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

**Slate 11:**

Watermark.

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

Same as slate 09.

**Slate 12:**

- **Fine:** *flat, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *extended disorganized, coarse.*

### 3.17 Stucco



#### Stucco 01:

- **Fine:** *flat, smooth.*
- **Medium:** *round, coarse.*
- **Coarse:** *round, coarse.*



#### Stucco 02:

Watermark.

- **Fine:** *round, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *round, coarse.*



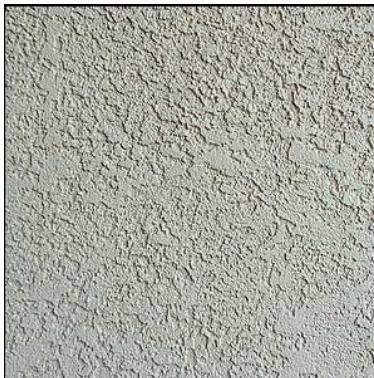
#### Stucco 03:

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *flat, coarse.*



#### Stucco 04:

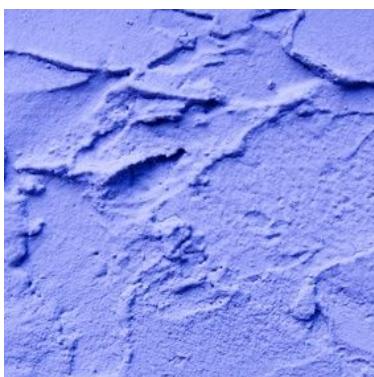
- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *flat, coarse.*

**Stucco 05:**

- **Fine:** *flat, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *round, coarse.*

**Stucco 06:**

- **Fine:** *flat, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *round, coarse.*

**Stucco 07:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *extended disorganized, bumpy.*

**Stucco 08:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *flat, coarse.*

**Stucco 09:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *flat, coarse.*

**Stucco 10:**

- **Fine:** *flat, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *round, coarse.*

Same as stucco 05.

**Stucco 11:**

- **Fine:** *flat, coarse.*
- **Medium:** *round, coarse.*
- **Coarse:** *round, coarse.*

**Stucco 12:**

- **Fine:** *flat, coarse.*
- **Medium:** *flat, coarse.*
- **Coarse:** *flat, coarse.*

### 3.18 Velour



#### Velour 01:

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *flat, velvety.*



#### Velour 02:

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *extended disorganized, bumpy.*



#### Velour 03:

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *extended disorganized, bumpy.*



#### Velour 04:

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *extended disorganized, bumpy.*

**Velour 05:**

- **Fine:** *extended disorganized, coarse.*
- **Medium:** *extended disorganized, coarse.*
- **Coarse:** *flat, velvety.*

**Velour 06:**

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *extended organized, bumpy.*

**Velour 07:**

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *extended disorganized, bumpy.*

**Velour 08:**

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *extended disorganized, bumpy.*

**Velour 09:**

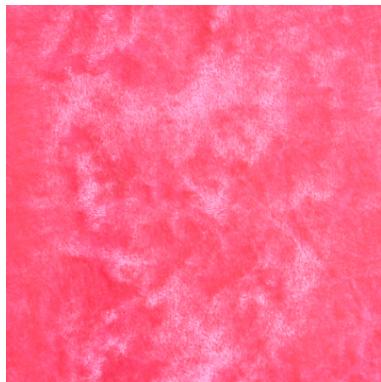
- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *extended disorganized, bumpy.*

**Velour 10:**

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *extended disorganized, bumpy.*

**Velour 11:**

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *extended organized, bumpy.*

**Velour 12:**

- **Fine:** *flat, velvety.*
- **Medium:** *flat, velvety.*
- **Coarse:** *flat, velvety.*