

Modular Course D. Customization Engineering

Unit D1: Customization in the Leather & Footwear Sector

Lecture D1.2 – Methods for Gathering & Assessing Customization Requirements



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T2.2 – Development of modular
courses and training
material.

D2.4 – Modular Course in
Customization Engineering



Contents

- ❑ Introduction
- ❑ Methods for Assessing Customization Specifications
- ❑ Tanning Methods
- ❑ Types of Leather Cuts
- ❑ Leather Finishes
- ❑ Choosing the Right Leather
- ❑ References

Introduction

- ❖ Customers expect style, comfort, and performance in leather & footwear products.
- ❖ Traditional mass production is insufficient for customization.
- ❖ **Digital Tools:** 3D foot scanners, CAD/CAM software, biomechanical analysis.
- ❖ **Material Testing:** Strength, durability, flexibility (ISO standards).
- ❖ **Customer Feedback:** Product trials and digital feedback loops.

Methods for Assessing Customization Specifications

Data Collection:

- Manual tools: tape measures, calipers (prone to human error)
- Digital tools: 3D scanners, non-invasive, precise

Analysis & Interpretation:

- Fit analysis using biomechanical models
- Material & design compatibility
- Software simulations for gait, walking patterns

Specification Documentation:

- Digital product specification sheets
- PLM systems for team coordination
- Continuous customer feedback loops

Tanning Methods

Chrome Tanned Leather:

- Chromium salts (chromium sulfate)
- Soft, supple, uniform color
- Fast and efficient

Vegetable Tanned Leather:

- Natural plant-derived tannins
- Firm, durable, develops patina over time
- Environmentally sustainable

Types of Leather Cuts

Cuts and Their Characteristics:

- Whole leather: entire hide, varying thickness
- Side: half hide, lengthwise cut
- Shoulder / Double Shoulder: firm but flexible, good for tooling
- Bend / Double Bend: prime sections, versatile use
- Butt / Double Butt: thickest, for heavy items
- Belly / Double Belly: softer, stretchier, non-prime

Leather Finishes

- Brush-colored: unique color patterns
- Embossed: stamped patterns
- Handworked: tooled/stamped by hand
- Metallic: shiny, reflective
- Nubuck: soft, fuzzy surface
- Oil Leather: color changes with flexing
- Patent: glossy, high shine
- Pebbled: bumpy texture
- Perforated: holes/patterns for breathability
- Printed: textures or patterns printed
- Saffiano: cross-hatch pattern with wax coating

Choosing the Right Leather

Factors to Consider

- ❖ Durability: lifespan of the product
- ❖ Appearance: natural vs corrected vs synthetic
- ❖ Feel & flexibility: soft, firm, stretch
- ❖ Cost: higher grade = more expensive
- ❖ Suitability: specific product requirements (bags, furniture, clothing)

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