



SUSTAINABLE LEATHER®

**DANI**

**PRODUCTION CYCLE**

[www.gruppodani.it](http://www.gruppodani.it)



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# ABOUT US

## DANI, AN INDUSTRIAL GROUP

From its origins as a small family-run tanning business in 1950, Dani is now a multinational company with global positioning.

We can rely on:

- 1,200 employees;
- 180,000,000 € turnover, 75% of which is export;
- 3 full cycle tanneries in Italy;
- 3 facilities abroad for cutting and sewing operations of finished leather;
- 2 sales offices in the USA and China;
- 2 Instant Service warehouses in Italy and the USA.

Dani is an industrial company which can supply leather to a wide variety of sectors and includes Dani Automotive and Dani Home Style & Fashion, both partners of leading international brands.

All the production facilities are located in Arzignano which guarantees the control, quality and reliability of the goods produced. In order to assist customers in the post-production phase of the leather as well, Dani has forged three new partnerships with highly specialised cutting and sewing departments to support the existing cutting department in Arzignano: Dani Automotive Tunisia and Dani AFC.

### Sustainable production

Thanks to the latest advanced technology, tanning leather has become a process that respects and safeguards the environment. Systems for managing and recovering natural resources and waste products have been put in place throughout the production cycle using methods which safeguard health and safety in the workplace as well.

For Dani, sustainability does not just mean meeting the regulations laid down by industry, but also continuing to seek innovative solutions focused on the environment, the people who work there and future generations. This is also made possible by Dani's collaboration with the entire district which includes chemical manufacturers, purification treatment operators and all the companies involved in recycling of tanning industry waste.



DANI

ABOUT US

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# PRODUCTION CYCLE



*“The quality of the finished product is the result of many variables within the production cycle which can only be guaranteed by the experience in the art of tanning built up over the years.”*

## BEAMHOUSE

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In the beamhouse phase, all the treatments are carried out which prepare the hides for the tanning substances: from desalination **1**, to soaking, un-hairing and liming which take place in the drums **2**, to the mechanical operations of fleshing, trimming **3** and splitting **3**.

## TANNING... AND RE-TANNING

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The tanning phase includes treatment with tanning agents in drums **4**, followed by pressing **5**, splitting **5** and shaving **5**. The tanned hide is called “wet blue”, or “wet white” if tanned without chrome.

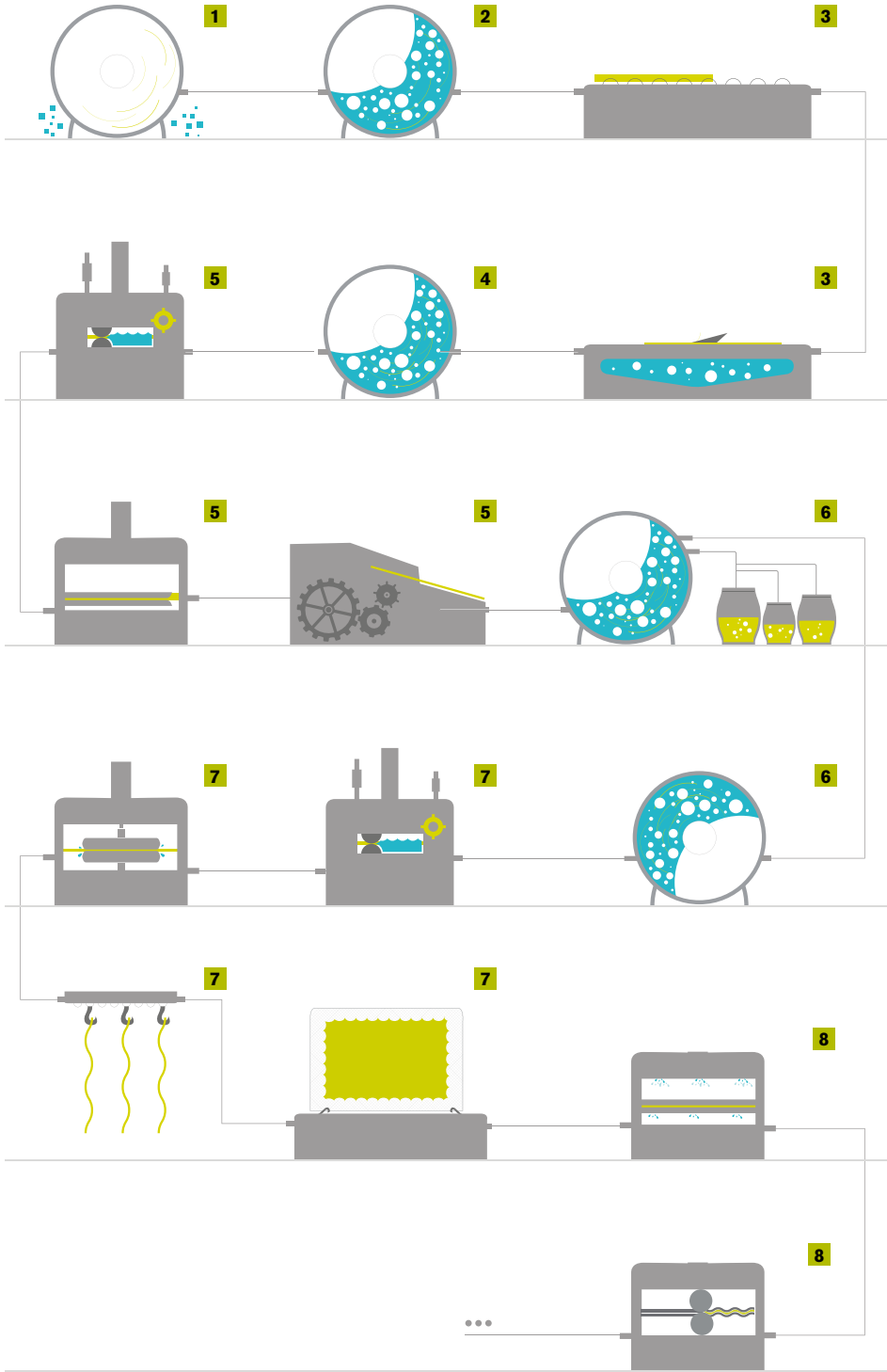
The re-tanning processes **6** of dyeing and fatliquoring **6** follow, which give the leather colour, consistency and softness.

## DRYING AND FINISHING

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The first drying phase is “sammying” **7** which eliminates the excess water. Several drying phases follow (combined based on the characteristics of the article): vacuum drying **7**, air drying **7** and toggle drying **7**. The dried leather is known as “crust leather”.

The finishing phases include the spraying of pigments, protective resins and wax **8**, ironing and fulling **9** which make the leather soft and shiny. The finished leather is selected one by one, measured and then destined for different markets, from furnishing to footwear, from clothing to leather goods.



DANI

PRODUCTION CYCLE

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# BEAMHOUSE



## 1. Preliminary operations

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When the unprocessed hides, whether fresh or salted, arrive at the tannery, they are checked for quality and state of preservation.

Salted hides first undergo mechanical shaking in a mesh drum to remove the superficial salt which will be recycled for uses in other sectors while the fresh hides are processed immediately, after a thorough quality check.

In the Italian facility in Via 5° Strada, where the beamhouse operations take place, conveyor belts have been installed which allow the hides to be transported and fed into the machines and moved from one machine to another. This results in a significant reduction in handling with forklift trucks and grab loaders.

Notable improvements in safety for workers are obtained with this system and the risk of accidentally damaging the hides is kept to a minimum.

## 2. Beamhouse chemical operations

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This step includes a series of sequential chemical operations carried out inside the liming drums:

- soaking to rehydrate raw hides and remove impurities;
- un-hairing to remove the hair;
- liming to relax and open up the fibre structure of the leather.



### 3. Beamhouse mechanical operations

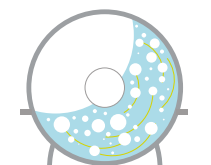
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Limed hides, known as “pelts”, are discharged from the drums to be fleshed. The fleshing operation allows the fat and the subcutaneous tissues to be removed using a machine with a rotating cylinder fitted with blades.

Now the manual process of trimming takes place which gives a definite outline to the edges of the hides by removing the excess parts. The next step is splitting the pelt: the pelt is divided lengthwise to create a uniform thickness, so that it is better suited for the next stages. The upper side is called “top grain”, whereas the lower side is called “split”.



**1** Preliminary operations



**2** Beamhouse chemical operations



**3** Beamhouse mechanical operations

# TANNING AND RE-TANNING



## 4. Tanning

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Tanning includes a series of processes performed in the drum:

- de-liming to reduce the swelling of hides by eliminating the excess lime and by facilitating the penetration of tanning chemicals;
- bating to obtain a clean grain and make the hide pliable;
- pickle to guarantee that the hides meet the acidic pH values, to facilitate the action of the tanning substances;
- tanning to prevent the putrefaction of the hide and to confer physical and mechanical properties, through the use of a tanning product.

Based on their appearance, hides are divided into “wet blue”, colouring caused by using chrome and “wet white”, if tanned without chrome.

## 5. Mechanical operations in preparation for re-tanning

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The tanned hides normally undergo the following operations in preparation for re-tanning:

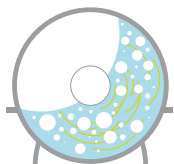
- pressing to reduce and even out the water content and to smooth out the hides;
- splitting if they have not already been split;
- shaving to ensure a uniform thickness of the hides.

## 6. Re-tanning

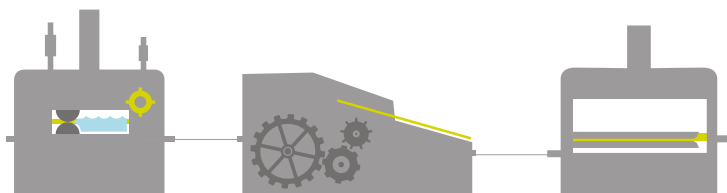
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The shaved hides are now ready for the re-tanning processes which are also carried out in the drum:

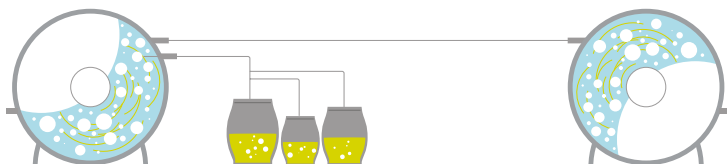
- re-tanning to confer fullness and consistency to the hides, thus guaranteeing specific physical properties;
- dyeing to colour the hides based on the customers' request;
- fatliquoring to give fullness and softness to the hides, depending on the type of finished product.



**4** Tanning

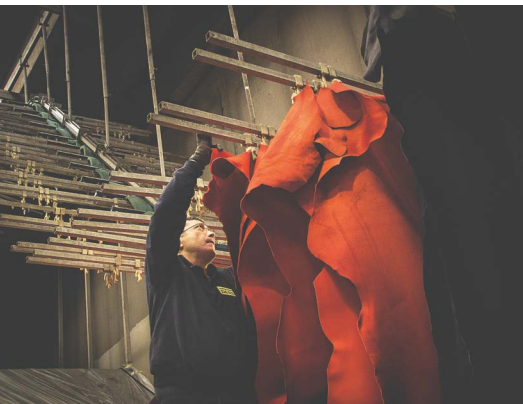


**5** Mechanical operations in preparation for re-tanning



**6** Re-tanning

# DRYING



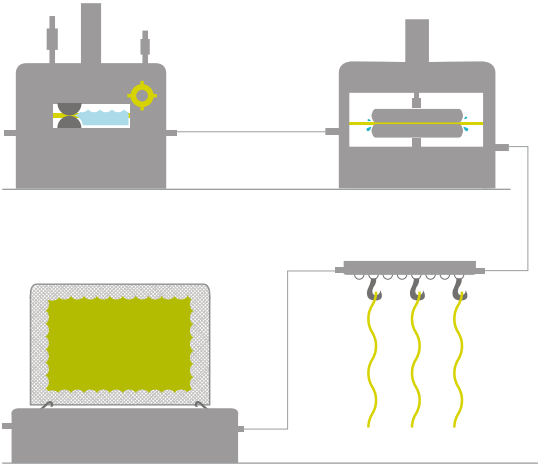
## 7. Drying

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Sammying is carried out before the drying operations to eliminate any excess water and creases in the leather. After this operation, the dyed hides must be dried using a combination of different types of drying, depending on the characteristics required for the final product.

- Vacuum drying: is a process that consists of positioning the whole hides on metal plates, which are hermetically closed by a cover. The drying is achieved by a combined action of heat and pressure reduction between the plates, which allows the water to evaporate rapidly at lower temperatures.
- Air drying: the hides are placed on metal rods and rotated on a suspended chain inside the tannery.
- Toggle drying: the hides are attached by toggle clips to a frame without making any holes in them and stretched before being placed in a dryer.

Once dried, the hides may also be staked depending on the characteristics required for the final product. The staking machine softens the leather, in preparation for the finishing stage, thanks to the mechanical movements of the pin wheel and humidification. The dried, staked leathers are called "crust leathers".

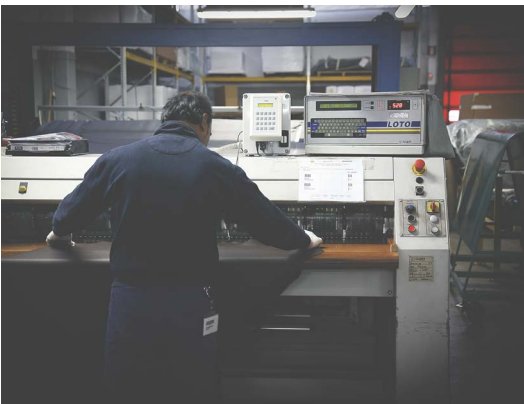


**7** Drying





# FINISHING, SELECTION AND MEASURING



## 8. Finishing processes

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In most cases, the crust leathers still require a series of mechanical and surface chemical refining treatments aimed at conferring the final appearance. These operations are performed in a specific order which may vary based on the characteristics required for the final product:

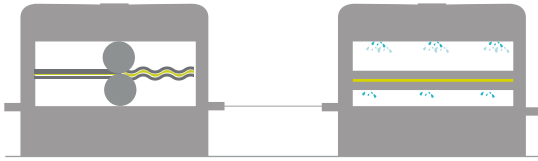
- buffing to partially remove the top grain to eliminate/reduce the blemishes of the leather or to obtain a velvet-like effect. This operation is carried out only on nubuck and corrected grain leather;
- spraying in which dyes, resins, pigments, waxes and film-forming agents are applied to the leather, to give a certain appearance, as well as physical and mechanical performances;
- embossing allows specific patterns to be printed on the leather through the pressure of textured rollers;
- milling is a dry process carried out in drums, that makes leather softer and separate the fibres;
- ironing is a mechanical operation that determines the sheen of the leather. Moreover, the heat generated by this operation activates resins (if used in the earlier stages), to give softness and an irresistible tactile feel to the leather.

## 9. Selection and measurement

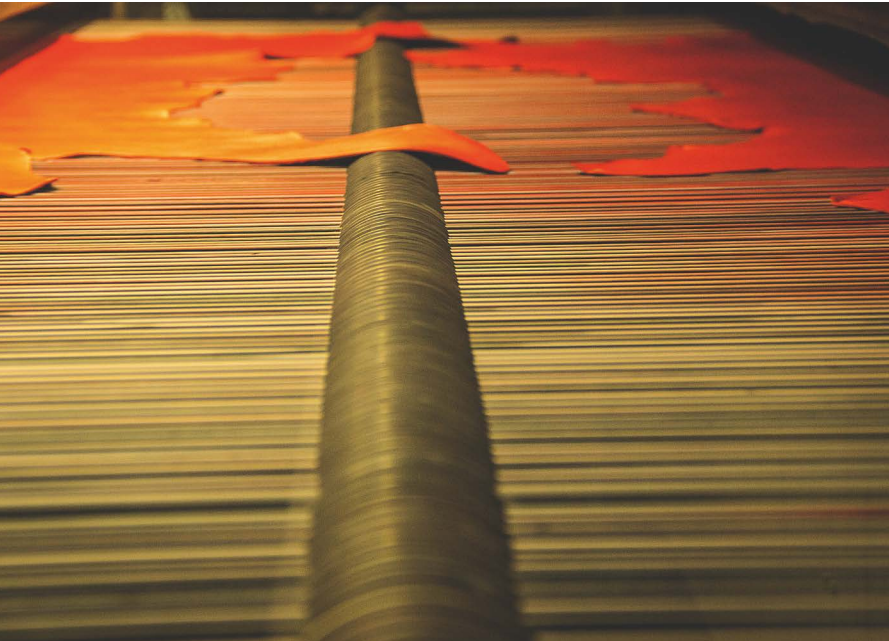
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Qualified staff select the hides one by one before measuring them.

The selection is based on specific standards decided together with customers. The area of the hide is measured and marked on the flesh side with a bar code label and a stamp.



**8** Finishing processes



# RESEARCH & DEVELOPMENT AND LABORATORY



## 10. Laboratory

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The Dani test laboratory, with cutting-edge equipment and specialised technical personnel, completes the production cycle and guarantees quality and performance through:

- systematic tests of each production lot to check the specific performance requirements, during all the steps of production process up to the finished leather;
- drafting of reports with the results of the tests carried out on each lot produced, based on the requirements of each customer;
- specific tests for the automotive, furniture, footwear, leather goods and clothing industries, in accordance with European and international regulations;
- daily checks on the requirements of the chemical products purchased to fully ensure the constant quality of the leather in the long term;
- interaction and collaboration with the technicians in the department for developing new products and researching process innovation.

## R&D

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Dani annually invests approximately 1.5% of its turnover in research and development. This internal company department also oversees a wide network of partnerships with research centres and prominent Italian universities, constantly

aimed at product, process and organisational innovation. Tanning is a challenging process that requires constant measurement, monitoring and technological innovation, amply demonstrated by the certifications obtained, including the EDP and Carbon Footprint certification which Dani was the first tannery in the world to attain.

The fact that the entire production chain is in Italy is also a particularly important feature which has led to the attainment of the "Leather From Italy Full Cycle" product certification. Substantial innovations in terms of process and machinery can be combined

with the stylistic and technical improvements of the products because the entire production cycle is carried out and managed in Italy.

The certifications, shown here, demonstrate our fully-fledged commitment and position Dani as one of the most advanced companies in the international tanning industry today. Far from representing a point of arrival, each certification is, in fact, an essential tool for constant improvement made possible by different research lines, as shown in detail on the website [www.gruppodani.it](http://www.gruppodani.it).

**CERTIFICATIONS**



QUALITY MANAGEMENT SYSTEM CERTIFICATION

Certified division:  
Home Style & Fashion



CERTIFICATION OF THE QUALITY MANAGEMENT SYSTEM



ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION



CERTIFICATION OF THE HEALTH AND SAFETY MANAGEMENT SYSTEM IN THE WORKPLACE



**LEATHER FROM ITALY FULL CYCLE**  
UNI EN 16484:2015



**CARBON FOOTPRINT**  
ISO/TS 14067: 2013



**EPD & PROCESS EPD**  
ISO 14025



**DER BLAUE ENGEL**  
RAL-UZ 148



**GOLDEN M**  
RAL - GZ 430

# CUTTING AND SEWING



## 11. Cutting and sewing

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To be kept in close contact with customer requirements and ensure the best quality of its products in the later stages of the supply chain, Dani has also become highly specialised over the last few years in cutting and sewing operations.

To address increasing market demand, Dani decided to add three highly specialised sites in cutting and sewing to the Cutting Department in Arzignano by entering into key partnerships with: Dani Automotive Tunisia, specialised in cutting operations; Dani AFC, located in Slovenia, specialised in cutting and sewing operations, and Dani & Co Leather, situated in Moldova, which not only carries out cutting operations, but also makes steering wheel covers.

Each hide is subjected to a process of identifying blemishes based on a catalogue of blemishes provided by each customer. The cutting stage then follows which is carried out by machines configured with a software that scans the hides and automatically positions the templates (automated cutting) or, alternatively, uses hydraulic presses (manual cutting). After the cutting operation, the cut hides are shaved and, if requested, also fleshed. The cut pieces are individually quality checked and stamped to guarantee the quality and traceability of the products.



## Steering wheels

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We can also provide a harmonisation operation for the production of steering wheels. This allows the cut hides to be catalogued based on their suppleness, so kits can be assembled with complementary suppleness, greatly facilitating the final assembly of the steering wheel. We are pioneers in this field as well. We were the first company to create machinery to divide the hides based on this criteria.

## Seats

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For the production of seats, we can also offer services for hot rolling, customised perforation following complex designs, and logo embossing.

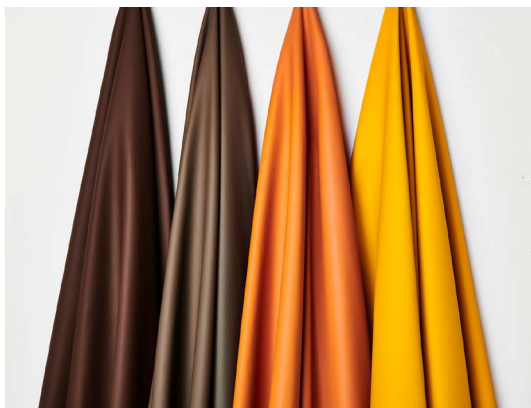
## Sewing operations

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In addition to being specialised in cutting operations, Dani AFC can also complete a further step by providing sewn seat covers and covered panels. It has machinery which allows different types of fabric to be rolled and cut, assembling the various parts of the seat with trims and zips.



## INSTANT SERVICE



We have an in-depth knowledge of our customers' production requirements and the need to be able to supply the right leather at the right time. The substantial investment that this service calls for is justified by our ability to satisfy our customers' requests.

25 ranges, over 500 colours.  
The wide range of leathers allows designers to play with the latest colours, with square and cubic forms, or soft and sinuous shapes.

Prompt delivery to the customer within 48-72 hours, depending on the destination.

Furniture, leather goods, footwear, aviation, marine, automotive industries and the aftermarket: Dani is now able to rapidly meet the needs of multiple sectors, including small quantities (minimum order 1 hide - 5 m<sup>2</sup>).

On-line request of samples:  
a sampling service is available via our website:  
[www.gruppodani.com/it/instant-service](http://www.gruppodani.com/it/instant-service)

This further demonstrates to our customers the care and attention we take over all aspects of the production process, with a view to assisting our customers whatever their requirements.

## Showrooms

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As a producer of high quality leather, with over sixty-five years' experience in the market, open to innovation and with a heightened awareness on environmental, social and economic issues, Dani felt the need to make its know-how available to sector-based designers and interior architects. These are the reasons behind Dani's opening of a showroom in one of major cities in the world in 2015: New York.

In 2017, Dani intensified its presence in the world by opening a prestigious showroom in Shanghai, situated in the former Shanghai stock exchange, renovated by the Italian architectural firm, Stefano Boeri Architetti. Since October 2018, a new headquarters has been opened for customers in Arzignano.



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