



The banner features a background of the Italian and Russian national flags. The text is centered and reads: "1ST ITALIAN-RUSSIAN ALUMINIUM FORUM" in large white letters, followed by "24-25 JUNE 2021 - ONLINE EVENT" in smaller white letters. Below the main text, there is a yellow bar containing logos for the organizing body (metef), the Aluminium Association (AI), and the media partner (A&L).

**1ST ITALIAN-RUSSIAN
ALUMINIUM FORUM**
24-25 JUNE 2021 - ONLINE EVENT

ORGANIZED BY **metef**  MEDIA PARTNER **A&L** Aluminium Alloys Process Encouraging Foundry Techniques

Preparing human capital for the aluminium industry 4.0

(Gabriele Ceselin, CEO/GM AQM srl-Centro Servizi Tecnici alle Imprese)

SESSION 1 – 24/06/2021

The experience of HPDC School (technical master) as a training method for human capital competences growth



High Pressure Die Casting School

The technical master for the HPDC foundries

An initiative carried out by AQM and CSMT (Brescia area) who are focalized on developing the competitiveness of industrial *products and processes and technology transfer.*



The main "elements" of the companies:

- Material Assets (plants, facilities, etc.);
- Financial Resources;
- Know How (capability to make products/services);
- Market (customers);
- *Human capital* (employees, collaborators, managers).

The *human capital* is the final "*transformer*" of material and non material assets into value for the company and the end customer. It "*TRANSMITS to the ground*" the company's energy under perceived value !



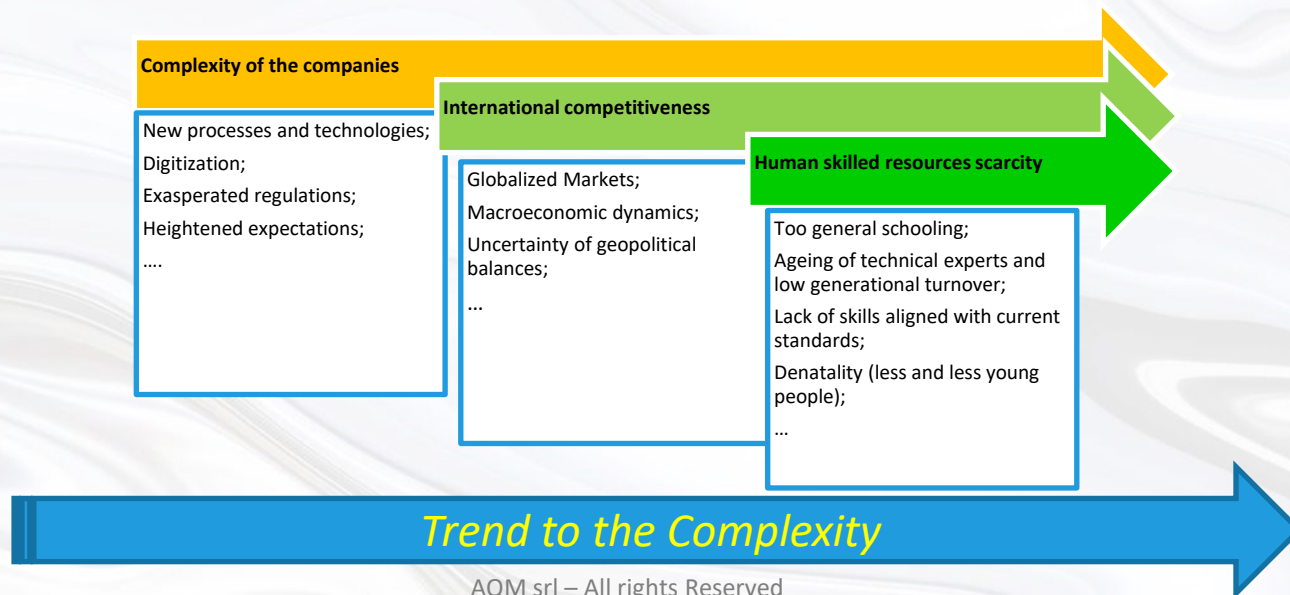
The Human Capital

Yesterday

- Operational workforce;
- Executive capacity / predominant executive roles;
- Sufficient basic skills;
- Little personal initiative;
- Non-critical availability;
- Stable relationship between the company and employees.

Today

- Workforce+management of direct/indirect resources;
- Interdisciplinary and Problem Solving skills;
- Generally incomplete or low basic skills;
- Management inspired by organizational and operational autonomy;
 - Critical availability (scarcity)
- Very dynamic relationship between the company and employees



The HPDC School experience

...we were on 2015:

- More intensive need of new human capital for the companies;
- Close relationships with companies and constant dialogue, to hear better their needs;
- Availability of little foundry plant with complete HPDC machine, not used, at CSMT Gestione;
- Strong AQM's experience for the design and planning of technical training courses;
- "Operational" approach to training, not academic, but technically/scientifically correct and pervaded by up-to-date "application experiences";
- Availability of academic and professional teachers with long and consolidated operational experience in the reference industry;
- Creation of a "technical-scientific committee" composed of: experts , professional teachers, academics, involved to design, development, monitoring and improvement of the master;
- Involvement of companies specialized in technologies, equipment and solutions specific to the HPDC industry.

The NEEDS of the HPDC world in brief (and of others)...

Yesterday and Today...

Generational Change

Compensate for the educational gap in technical high school and university.

Train professional skills Certified (recognized)

Promote meeting of users, designers, manufacturers of casts and raw materials

Maintain quality standards and support the **innovation** with a **constant growth** of the **competences**

Increase the level of Quality for the customers.

Manage the «factory» in an integrated way, considering technical and productivity needs, standards constraints, sustainability and new 4.0 drivers.



High Pressure Die Casting School

The technical master for the HPDC foundries

www.scuoladipressocolata.it

HPDC School as a new concept for training:

- Focalized
- Specialistic
- Advanced
- Updated
- «Brief» but intensive
- Managing oriented
- 4.0 technologies for processes/products oriented

The attendees target:

Company employees
(young or senior) of
foundries or companies
using castings, coming from
the production
departments and technical
offices



Employees of the technical
offices and design of the
users of castings

School and university graduates
With a diploma and / or
bachelor's or master's degree in
engineering or other technical-
scientific specializations.

University's students

The ultimate goal:

Train the "new professionals" for the world of HPDC foundries:

- the castings producers;
- the users of the castings;

With competences:

- updated;
- in-depth skills;
- rapidly usable in the industrial sectors;
- qualified/certified by a third party.

THE "NEW" PROFESSIONALS

HPDC – Technologist: focus on production

HPDC- Project Manager: focus on products

HPDC - Production Manager: global view on production plant



Focus on the output competencies

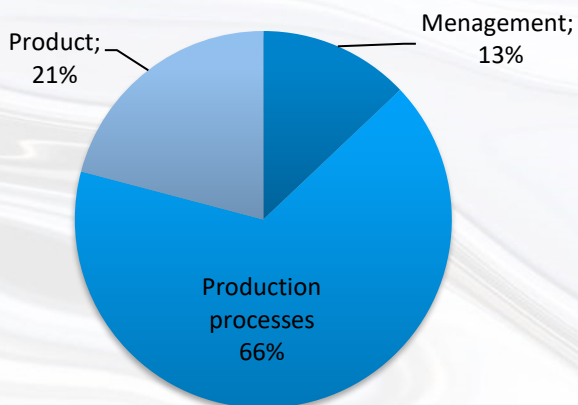
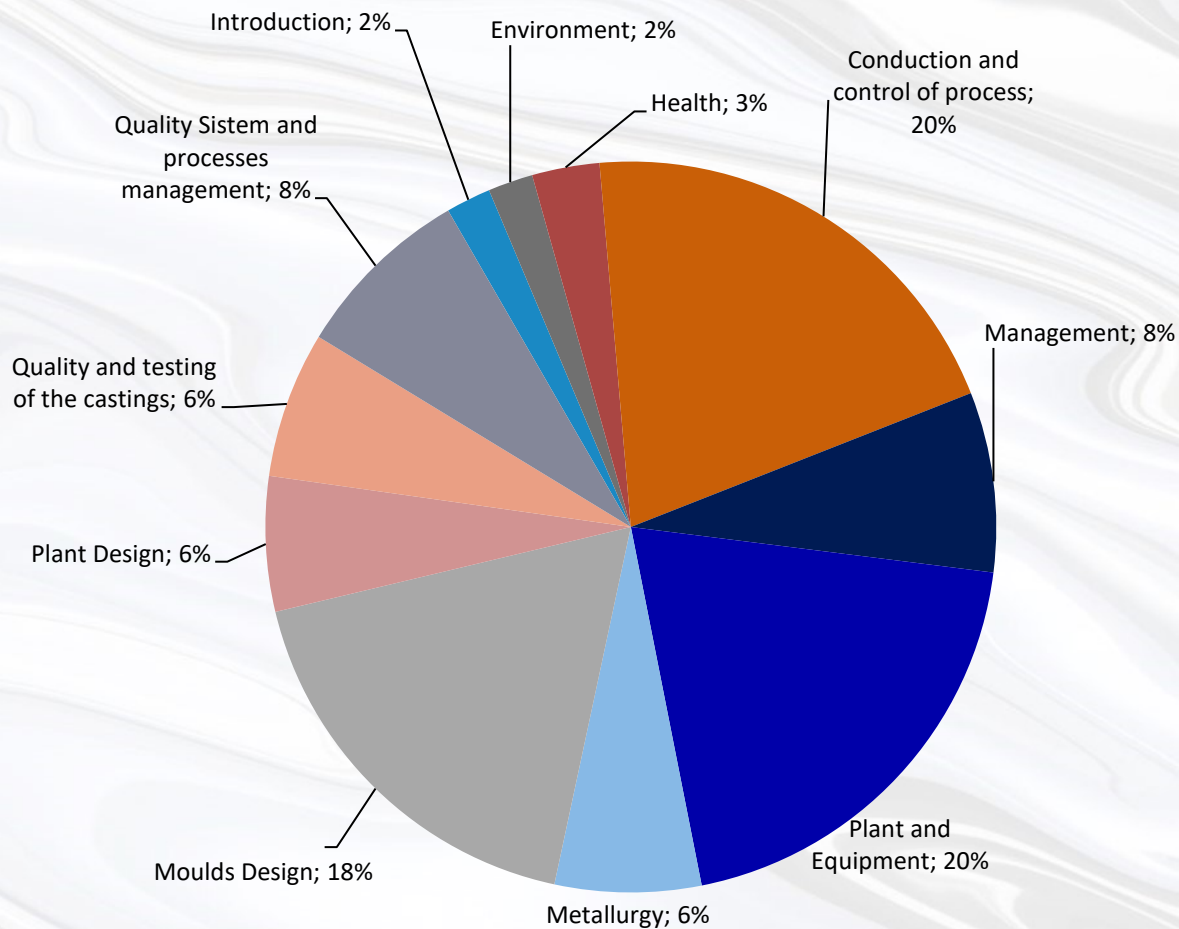
- **HPDC TECHNOLOGIST:** He/She is the technologist for the process industrialization. Participants will become technical experts in process development, with proven knowledge of metallurgy and the ability to manage production cycles. HPDC technologists will both be able to apply existing procedures and define new ones, considering the specificity of the products that must be manufactured. They will manage production in accordance with requirements, available resources and quality standards. The HPDC Technologist will identify the proper technology available for manufacturing, will set up phases and cycles of manufacturing and will make sure that the product fits the required performances..
- **HPDC PROJECT MANAGER:** He/She is the technologist for the product's industrialization. Participants will become technologist experts in product industrialization. They will be skilled in metallurgy and have the ability to plan and validate processes according to customers' requirements. They will have a deep knowledge of methodologies, tools and die casting techniques and will assure the respect of costs, deadlines and requested quality. Moreover, they will measure customer satisfaction. They could either join the technical dept. of a die casting company or be a part of the purchase office of an end-user company, being able to monitor the supply process
- **HPDC PRODUCTION MANAGER:** He/She can aspire to the production responsibility of a diecasting foundry. They will have a managing role in die casting, being in charge of the entire production process. They will have a full professional proficiency and will face different issues and topics in the manufacturing process. They will develop strategies and set priorities, managing all the available resources.

The Master features:

- **402 hours of training** organized into **12 specialistic main topics**: For each one the attendees have to pass an written examination;
- **66 days of lessons** (Friday and Saturday morning);
- More than **30 teachers**;
- **Frontal lessons** and **distance learning**;
- **Blended learning**: 10 % with self-training mode;
- **4/5 educational visits**;
- **Practical demonstrations in a diecasting foundry** (c/o a training partner);
- **7 intermediate examinations** (tests and/or exercises);
- **Final examination**: interview and presentation of a company Project Work.

HPDC: structure and topics composition

N.	Main Topics
1	Environment
2	Casts finishing
3	Management
4	Management 4.0 oriented
5	Quality Management
6	Plants and equipments
7	Introduction
8	Metallurgy
9	Proces
10	Quality products
11	Plant layout
12	Moulds



The HPDC School numbers: from 2015 to today...

I edition 2015-2016

30 students from all Italia

17 companies

Qualified personell : 21



II edition 2016-2017

19 students from all Italia

12 companies

Qualified personell : 11



III edition 2018-2019

24 students from all Italia

13 companies

Qualified personell : 14

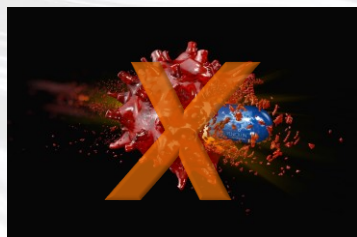


V edition 2020-2021 – In progress

19 students

8 companies

Qualified personell: to do examination



Special IV edition 2019 – Piemonte

14 students Brescia and Piemonte Region

4 companies

Qualified personell : 12



VI edition 2022-2023 (...autumn 2022)

Planned for the italian market



Special Edition for European market

Under construction



The HPDC School numbers: from 2015 to today...



Students

Trained students in the first four HPDC edition: 87 (+ 19 today in classroom...)



QUALIFIED: 58 +....

Customer Satisfaction Master: 4,5/5

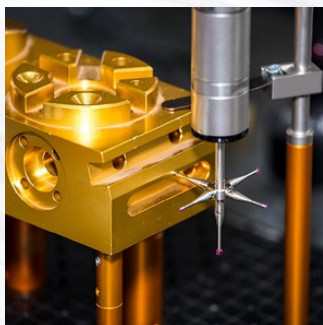
Customer Satisfaction docent del Master: > 4/5

The students industrial sectors

- **Foundries of aluminum alloy castings with HPDC and LPDC processes;**
- **Metal refineries;**
- **Design and production of molds for aluminum die casting;**
- **Manufacturers of aluminum alloy components for the automotive sector;**
- **Radiators;**
- **Accessories and components for doors and windows;**
- **Tools construction;**
- **Manufacturers of aluminum alloy components for household and lighting equipment;**
- **University students.**

After HPDC...

AQM has developed new technical Masters based on the same elements and didactic format used for HPDC School, more and more appreciated and used....



ROBUST METROLOGY: Measuring, evaluating and deciding in a aware way



LPDC SCHOOL- Course for LOW DIE CASTING PRESSURE



MAXE: Manager for the Excellence

School for the high specialisation for the metallurgic and metal manufacture companies.



The HPDC School promoter

Focus on growth

- Product development
- Process development
- Testing
- Material
- Advanced Professional Training
- Technical consulting
- Enterprise services
- Certification

Focus on innovation

- Product/Process innovation
- Research to business
- Public funding
- New materials development
- Enterprise collaboration
- Digitalization

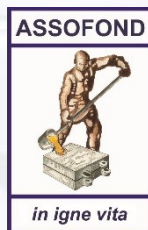


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LE COMPETENZE
IN PRESSOCOLATA**



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Thank you for the attention

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