

One way to improve the microstructure and increase the mechanical properties of the alloy is to provide the required cooling rate of casting, which is achieved by the use of various mold materials and coolants.

The simulation of the casting process with the different cooling rates and their effect on the structural parameters of the magnesium alloy were performed using ProCast™ software. The calculations were performed for the following technologies: sand casting; casting in a steel mold, air cooled; casting in a copper mold, air cooled; casting in a copper mold, water cooled; casting in a copper mold, cooling with liquid nitrogen.

Casting in a metal mold is more effective than sand casting because, due to the higher cooling rate, it provides better microstructure parameters of the alloy. The secondary dendrite arm spacing (SDAS) has been reduced by almost 2 times, the spread in the values by volume also decreased. The difference was higher with increasing the cooling rate when casting in a metal mold.

Increasing the cooling rate resulted in significant grain refinement as well as a decrease in grain size deviation from the mean. So, the use of a copper mold with water cooling leads to grain refinement of the alloy by almost 2 times compared to sand casting.

Practical studies of the microstructure and mechanical properties of standard cast samples confirm the calculations made using ProCast™ software. The average grain diameter of the matrix for sand casting was 177 μm , for casting in a steel mold with air cooling – 88 μm , for casting in a copper mold with air cooling – 60 μm , for casting in a copper mold with water cooling – 31 μm , for casting in a copper mold with cooling with liquid nitrogen – 11 μm .

As a result, the improvement of the microstructure parameters of the Mg-Zr-Nd magnesium alloy has led to the improvement of the complex of mechanical properties of the alloy after heat treatment (Table 1).

Table 1. Mechanical properties of Mg-Zr-Nd magnesium alloy at different cooling rates

Technology	Tensile strength, MPa	Relative elongation, %
Sand casting, air cooled	231,1	3,4
Steel mold, air cooled	241,7	5,4
Copper mold, air cooled	246,2	5,8
Copper mold, water cooled	253,6	6,1
Copper mold, cooling with liquid nitrogen	305,4	16,0

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INTERCULTURAL COMMUNICATION AS A FACTOR FOR SUCCESSFUL PROFESSIONAL ACTIVITIES

Today's job market requires university graduates and future specialists who possess a high level of professional training and certain skills of effective communication. These two elements of success performance in their professional activity can provide an opportunity to find a well-paid job, career advancement and thus a person can satisfy their professional and social needs.

Our country's European integration aspirations require the training of a specialist who is able to solve professional tasks with representatives of professional circles from different countries and cultures.

Traditionally, the structure of professional competence of any specialist consists of three main components: knowledge, professional and learning skills, which are supported by professionally important qualities [2]. A representative of each type of profession has its own set of personal qualities that contribute to successful mastering and further performance of the professional activity.

According to O.V. Moshnyag, “intercultural communication is an instrument of influence on contacting cultures in the modern multicultural and multilingual world” [3].

In the course of university studies, great attention should be paid to students' language skills development, which guarantees the establishment of friendly and reliable business relations with representatives of other countries. Learning a foreign language provides students with knowledge about culture and customs and traditions of the people whose language is being studied. Thus, by establishing relationships with representatives of foreign companies, one becomes aware of some of the issues that might cause misunderstanding and intercultural conflicts and measures how to prevent them.

The cultural aspect of intercultural communication is at the heart of the whole process of business communication.

It should be noted that in the conditions of globalization the forms, methods and means of communication of people are constantly changing, which in turn changes the nature of communication.

It is obvious that limited language proficiency, which is not sufficient to avoid different types of misunderstandings, can be offset, at least at the level of non-verbal communication, by intercultural knowledge, especially that there is an existential platform, which is unique to all cultures.

At present, intercultural management is actively being developed, which aims to teach the basics of intercultural communication to professionals working in the field of international business or multicultural teams.

Intercultural communication can take the following forms:

- direct contact of communication;
- indirect communication of representatives of different cultures (through translator or through technical means);
- through texts on different media that help to study the characteristics of another culture [4].

According to M. Sokolova, one of the main conditions for successful intercultural communication is the attitude towards the communication partner not as a rival, but the desire to avoid imposing ideas, to harmonize the dialogue, which is the basis of cultural development [1, p. 48].

To summarize, participants of intercultural communication act should be able to:

- Define and identify the key elements of interpersonal communication, culture, cultural systems, and global communication;
- Compare and contrast cultures' values, beliefs, perceptions, and communication styles;
- Recognise negative perception: racism, prejudice, negative stereotyping and ethnocentrism;
- Analyse intercultural interactions and evaluate situations using intercultural communication skills
- Use the knowledge acquired to further develop one's cultural sensitivity.

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РАЗРАБОТКА ТЕХНОЛОГИИ ИЗГОТОВЛЕНИЯ ИЗДЕЛИЙ ДЛЯ АВИАЦИОННО-КОСМИЧЕСКОЙ ТЕХНИКИ МЕТОДОМ ВЫБОРОЧНОГО ЛАЗЕРНОГО ПЛАВЛЕНИЯ

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В производстве авиационной и ракетно-космической техники особое место занимают сложные технологические процессы, применяемые при изготовлении ракетных двигателей и высоконагруженных узлов пневмо-гидравлической системы ракетносителя из жаропрочных сплавов. Технология выбороч-