عنوان فارسی مقاله:
بررسی اثر خمیر سیمان و منطقه انتقال بر ایجاد مقاومت بت حاوی نانو و گازسیلیکا

عنوان انگلیسی مقاله:
Investigating the effect of the cement paste and transition zone on strength development of concrete containing nanosilica and silica fume
4. Conclusions

In this research, on the basis of obtained experimental results, the following concluding remarks can be made:

1. Introducing nS into both cement paste and concrete mixtures will lead to a considerable increase in early age compressive strength. The highest compressive strength result of 44 MPa was obtained for the NS7.5-Ref sample. This result revealed that the early age compressive strength of the concrete specimens was influenced more by nS than SF.

2. Utilization of nS (by 3%) had a more significant effect on the later age strength of concrete than for the cement paste.

3. SF can enhance cement paste strength development rates more than concrete rates.

4. The addition of SF increased the strength of nS-free paste samples only at 7, 28 and 91 days. This trend was also observed for corresponding concrete samples, except mixture No. 3.

5. The simultaneous presence of nS and SF provided the greatest effect on the strength development enhancement of both cement paste and the concrete samples known as NS5-SF5. Generally, through the paste and concrete mixtures in which SF content was increased, the optimum strength values belonged to the mixtures incorporating smaller nS contents.