# Article information:

Development of composites for 3D printing with reduced cement consumption - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0950061822014490?via%3Dihub>

# Article summary:

1. This article discusses the development of 3D concrete printing (3DCP) composites with reduced cement consumption through partial replacement with supplementary cementitious materials (SCM).

2. The proposed mixtures encompass replacement contents of 30% (using only limestone filler) and 40% (one with 40% limestone filler and, another, containing 30% filler and 10% metakaolin).

3. The results show the possibility of obtaining printable composites with reduced cement consumption for the printing system used, establishing itself as a relevant alternative for 3DCP technology in accordance with the criteria required for the printing system.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

This article is generally reliable and trustworthy in its discussion of the development of 3D concrete printing (3DCP) composites with reduced cement consumption through partial replacement with supplementary cementitious materials (SCM). The authors provide a detailed overview of their research process, including an explanation of their methodology, mix design, composition execution, and printing system. They also provide evidence to support their claims by citing previous studies that have successfully achieved similar results.

The article does not appear to be biased or one-sided in its reporting; rather, it presents both sides equally by discussing both the potential benefits and drawbacks associated with reducing cement consumption in 3DCP mixtures. Additionally, all claims made are supported by evidence from previous studies or from tests conducted during this research project.

The only potential issue is that some points of consideration may be missing from the discussion; for example, there is no mention of possible risks associated with using SCMs as partial replacements for Portland cement in 3DCP mixtures. Additionally, there is no discussion about how different types or amounts of SCMs may affect the properties of the composite or how they may interact with each other when used together. These points should be explored further in future research on this topic.

In conclusion, this article is generally reliable and trustworthy in its discussion of reducing cement consumption in 3DCP mixtures through partial replacement with SCMs. All claims made are supported by evidence from previous studies or tests conducted during this research project, and all potential biases are avoided by presenting both sides equally. However, some points of consideration may be missing from the discussion which should be explored further in future research on this topic.

# Topics for further research:

* Risks associated with using SCMs in 3DCP mixtures
* Interaction between different types of SCMs in 3DCP mixtures
* Effects of SCMs on properties of 3DCP composites
* Optimization of SCMs in 3DCP mixtures
* Durability of 3DCP composites with reduced cement consumption
* Life cycle assessment of 3DCP composites with reduced cement consumption

# Report location:

<https://www.fullpicture.app/item/d2bd1ccbb070260e848fedaa17ef5c66>