# Article information:

Fatigue tests and fatigue-life prediction models for hybrid welded-bolted demountable shear connectors - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S0142112323003274>

# Article summary:

1. The construction sector's production of cement and steel contributes to 15% of global CO2 emissions, making the development of demountable structural systems crucial for reducing environmental impact.

2. Demountable shear connectors (DSCs) offer a solution for the deconstruction, retrofitting, and replacement of damaged slabs in steel-concrete structures, improving construction efficiency.

3. Fatigue tests have been conducted on various types of shear connectors, including welded studs and bolted connectors, to evaluate their performance and determine their fatigue strength in composite structures.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article titled "Fatigue tests and fatigue-life prediction models for hybrid welded-bolted demountable shear connectors" discusses the importance of demountable structural systems in achieving sustainability goals in the construction sector. It specifically focuses on the fatigue behavior of shear connectors used in steel-concrete composite structures.

One potential bias in the article is its emphasis on the positive aspects of demountable structural systems and their contribution to reducing environmental impact. While this is an important aspect to consider, it would have been beneficial to also discuss any potential drawbacks or challenges associated with these systems. This would provide a more balanced perspective on their overall effectiveness and feasibility.

The article also makes unsupported claims about the performance of different types of shear connectors. For example, it states that high-strength friction-grip bolts have "adequate ultimate strength, large slip capacity, and sufficient energy dissipation capacity." However, no evidence or data is provided to support these claims. Without proper evidence, it is difficult to assess the validity of these statements.

Additionally, there are missing points of consideration in the article. For instance, it does not discuss the cost implications of using demountable structural systems or how they compare to traditional welded studs in terms of cost-effectiveness. Cost is an important factor that needs to be considered when evaluating the feasibility and practicality of implementing these systems.

Furthermore, there is a lack of exploration of counterarguments or alternative viewpoints. The article primarily focuses on the benefits and performance of demountable shear connectors without addressing any potential criticisms or limitations. This one-sided reporting limits the reader's ability to fully understand and evaluate the topic.

Another issue with the article is its promotional tone towards the proposed welded demountable shear connector (WDSC). The authors highlight its superior performance compared to traditional welded studs without providing a comprehensive analysis or comparison with other types of shear connectors. This promotional content raises questions about potential conflicts of interest or biases towards the WDSC.

The article also lacks a discussion of potential risks or challenges associated with the use of demountable structural systems. It is important to consider factors such as durability, maintenance requirements, and long-term performance when evaluating the suitability of these systems for real-world applications. The absence of this discussion leaves a gap in the analysis.

Overall, the article presents an interesting topic but falls short in providing a comprehensive and balanced analysis. It exhibits potential biases towards demountable structural systems and lacks critical evaluation of alternative viewpoints and potential drawbacks. To improve its credibility and usefulness, the article should address these issues and provide a more balanced perspective on the topic.

# Topics for further research:

* Cost implications of demountable structural systems in construction
* Drawbacks and challenges of demountable structural systems
* Comparison of different types of shear connectors in steel-concrete composite structures
* Long-term durability and maintenance requirements of demountable structural systems
* Criticisms and limitations of demountable shear connectors
* Alternative viewpoints on the effectiveness and feasibility of demountable structural systems in achieving sustainability goals in construction.

# Report location:

<https://www.fullpicture.app/item/c2492c908157e04eee088a262f0c577b>