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Bean pod epicarp ash concrete

Kirsanov, Mikhail Nikolaevich1 ![Изображение выглядит как Графика, круг, Шрифт, символ

Автоматически созданное описание](data:image/png;base64,iVBORw0KGgoAAAANSUhEUgAAACEAAAAhCAMAAABgOjJdAAAAAXNSR0IArs4c6QAAAARnQU1BAACxjwv8YQUAAAAwUExURQAAAADMmQDSqgLUqwPSqwHVqwLTqwTUqwPUrATUrEbfwZ7t3r7z6fX9+/7+/v///xihmMEAAAAJdFJOUwAFYI+mrs/X72k4BmEAAAAJcEhZcwAAIdUAACHVAQSctJ0AAAC2SURBVDhPnZGJEsIgDAXxtl78/99KyEISWhx1Z1rDe1uY2uRZGqwH9rTKldRBY5A3SCN0FaIR2gLBGvq50BVWRs6ZaSbcysU8MfgVDluCGP0Y2USHcnSlzlyVlC5M+thL7vnujMUO4Xm5s5eyaQR+Np75oSvDG+1dInGPP40jg7Ybiv3rWq4U913oRqV/W3uT+EK7bswQ4aOiwhfGXKEvEIzQVogidA1Sg9xDo5CNnKjPrAspvQHDHiAprsVVOAAAAABJRU5ErkJggg==)

Vorobiev, Ivan Ivanovich1\* ![Изображение выглядит как Графика, круг, Шрифт, символ

Автоматически созданное описание](data:image/png;base64,iVBORw0KGgoAAAANSUhEUgAAACEAAAAhCAMAAABgOjJdAAAAAXNSR0IArs4c6QAAAARnQU1BAACxjwv8YQUAAAAwUExURQAAAADMmQDSqgLUqwPSqwHVqwLTqwTUqwPUrATUrEbfwZ7t3r7z6fX9+/7+/v///xihmMEAAAAJdFJOUwAFYI+mrs/X72k4BmEAAAAJcEhZcwAAIdUAACHVAQSctJ0AAAC2SURBVDhPnZGJEsIgDAXxtl78/99KyEISWhx1Z1rDe1uY2uRZGqwH9rTKldRBY5A3SCN0FaIR2gLBGvq50BVWRs6ZaSbcysU8MfgVDluCGP0Y2USHcnSlzlyVlC5M+thL7vnujMUO4Xm5s5eyaQR+Np75oSvDG+1dInGPP40jg7Ybiv3rWq4U913oRqV/W3uT+EK7bswQ4aOiwhfGXKEvEIzQVogidA1Sg9xDo5CNnKjPrAspvQHDHiAprsVVOAAAAABJRU5ErkJggg==)

Serdjuks, Dmitrijs2 ![Изображение выглядит как Графика, круг, Шрифт, символ

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Roset Calzada, Jaume3 ![Изображение выглядит как Графика, круг, Шрифт, символ

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Suwaed, Ahmed Shakir Hasan4 ![Изображение выглядит как Графика, круг, Шрифт, символ

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Keywords:

Concretes; Calibration; Computer simulation; Constitutive models; Strength; Stress-strain curves; Static loads; Finite element method; Plasticity

Abstract:

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Автоматически созданное описание](data:image/png;base64,iVBORw0KGgoAAAANSUhEUgAAACEAAAAhCAMAAABgOjJdAAAAAXNSR0IArs4c6QAAAARnQU1BAACxjwv8YQUAAAAwUExURQAAAADMmQDSqgLUqwPSqwHVqwLTqwTUqwPUrATUrEbfwZ7t3r7z6fX9+/7+/v///xihmMEAAAAJdFJOUwAFYI+mrs/X72k4BmEAAAAJcEhZcwAAIdUAACHVAQSctJ0AAAC2SURBVDhPnZGJEsIgDAXxtl78/99KyEISWhx1Z1rDe1uY2uRZGqwH9rTKldRBY5A3SCN0FaIR2gLBGvq50BVWRs6ZaSbcysU8MfgVDluCGP0Y2USHcnSlzlyVlC5M+thL7vnujMUO4Xm5s5eyaQR+Np75oSvDG+1dInGPP40jg7Ybiv3rWq4U913oRqV/W3uT+EK7bswQ4aOiwhfGXKEvEIzQVogidA1Sg9xDo5CNnKjPrAspvQHDHiAprsVVOAAAAABJRU5ErkJggg==) icon. If any author or co-author does not yet have an ORCID ID, then they need to register themselves at <https://www.researchgate.net/>. It is simple and fast. The abstract is prepared according to the requirements of the journal <https://unistroy.spbstu.ru/en/abstract/>. The abstract should not refer the reader to the article ("The article contains ..."), it should be read as an independent micro-article with an emphasis on the research results. The abstract must follow the same IMRAD structure as the article itself. The text of the abstract is provided in English only.

Abstract example:

**The object of research** is a flat statically determinate trapezoidal truss with a rectilinear lower chord and four supports, one of which is a pinned, and three are roller. The purpose of this work is to analyze the dependence of the deflection of the truss and the shift of the movable support on the size, load, and number of panels. The load concentrated in the middle of the span, the load uniformly distributed over the nodes of the upper or lower belt are considered. **Method.** The initial forces in the elements are determined in analytical form by method of joints in the Maple computer mathematics system. The dependence of the truss performance characteristics on the number of panels is derived by induction based on analytical calculations of the sequence of trusses with different numbers of panels. External static uncertainty is revealed by adding five reactions of supports to the number of unknown components of the equilibrium system of the structure. The deflection of the truss and the displacement of the support are based on the Maxwell-Mohr formula. **Results**. By solving a number of problems for trusses with a different number of panels, it is found that for trusses whose number of panels is a multiple of three, the determinant of the system of equilibrium equations of nodes turns to zero, which corresponds to the instantaneous kinematic variability of the truss. The corresponding scheme of possible node speeds was found. For kinematically unchangeable trusses, formulas for deflection depending on the number of panels are obtained. The coefficients in the formula are polynomial type. The solution graphs show an abrupt increase in deflection as the number of panels increases.

# Introduction

This section contains the bulk of references to literature. Links are formatted, for example, like this [1]; or so [2], [3]; or so [4]–[6]. Shape them using the free Mendeley software. We will send you training materials as needed. It's simple, convenient, and saves you time and effort.

You can end this section like this (but not necessarily like this):

The object of the study was ...

The subject of the research was ...

Goal…

Tasks…

# Materials and Methods

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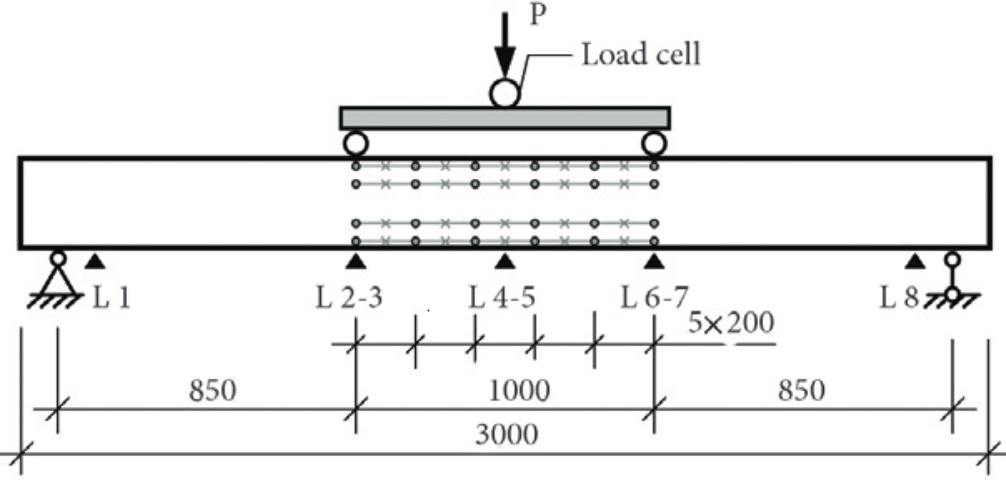


Fig. 1 - Testing scheme and layout of strain gauges on beams of first series for bending tests

Table 1. Physical and mechanical properties of supports

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Equations are inserted into the text in the form of tables with two columns and one row. All equations are numbered, including those that are not referenced in the text:

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|  | (1) |

# Results and Discussion

Text, text, text

# Conclusions

Text, text, text

# Acknowledgements

Text, text, text

# Fundings

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# Conflict of Interests

Declare conflicts of interest or state “The authors declare no conflict of interest.” Authors must identify and declare any personal circumstances or interest that may be perceived as inappropri-ately influencing the representation or interpretation of reported research results. Any role of the funders in the design of the study; in the collection, analyses or interpretation of data; in the writing of the manuscript; or in the decision to publish the results must be declared in this section. If there is no role, please state “The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results”.

# References

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