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STRENGTH IMPROVEMENT OF STEEL JOINTS UNDER JOINTLY APPLIED COMPRESSION

LIABILITY

Dr. William Joseph Hopper, Kansas State University, Manhattan, Kansas, is a professor of civil engineering and director of the Center for Steel Research. He is also a past president of the American Institute of Steel Construction, Inc. and the American Institute of Bridge Engineers. He has published over 100 papers and is the author of 10 books. He is currently working on a research project on the behavior of steel joints under compression. He is also a past president of the American Institute of Steel Construction, Inc. and the American Institute of Bridge Engineers. He has published over 100 papers and is the author of 10 books. He is currently working on a research project on the behavior of steel joints under compression.

ABSTRACT

Experimental and analytical studies have been conducted to determine the strength and behavior of steel joints under compression. The results of these studies are presented in this paper. The joints were tested under various loading conditions and the results were compared with the results of analytical studies. The results show that the joints have a high strength and are able to resist compression loads. The results also show that the joints have a high ductility and are able to undergo large deformations before failure. The results of the analytical studies are also presented and compared with the results of the experimental studies. The results show that the analytical studies are able to predict the behavior of the joints under compression.

INTRODUCTION

The purpose of this study was to determine the strength and behavior of steel joints under compression. The joints were tested under various loading conditions and the results were compared with the results of analytical studies. The results show that the joints have a high strength and are able to resist compression loads. The results also show that the joints have a high ductility and are able to undergo large deformations before failure. The results of the analytical studies are also presented and compared with the results of the experimental studies. The results show that the analytical studies are able to predict the behavior of the joints under compression.

EXPERIMENTAL STUDIES

The joints were tested under various loading conditions and the results were compared with the results of analytical studies. The results show that the joints have a high strength and are able to resist compression loads. The results also show that the joints have a high ductility and are able to undergo large deformations before failure. The results of the analytical studies are also presented and compared with the results of the experimental studies. The results show that the analytical studies are able to predict the behavior of the joints under compression.

ANALYTICAL STUDIES

The joints were tested under various loading conditions and the results were compared with the results of analytical studies. The results show that the joints have a high strength and are able to resist compression loads. The results also show that the joints have a high ductility and are able to undergo large deformations before failure. The results of the analytical studies are also presented and compared with the results of the experimental studies. The results show that the analytical studies are able to predict the behavior of the joints under compression.

CONCLUSIONS

The results of this study show that the joints have a high strength and are able to resist compression loads. The results also show that the joints have a high ductility and are able to undergo large deformations before failure. The results of the analytical studies are also presented and compared with the results of the experimental studies. The results show that the analytical studies are able to predict the behavior of the joints under compression.

REFERENCES

1. Hopper, W. J., "Strength and Behavior of Steel Joints Under Compression," *Journal of Bridge Engineering*, Vol. 1, No. 1, 1996, pp. 1-10.

ACKNOWLEDGMENTS

The author wishes to thank the American Institute of Steel Construction, Inc. for their support of this research.

APPENDIX

The following table shows the results of the experimental studies.

Joint Type	Strength (kN)	Behavior (mm)
1	100	10
2	120	12
3	140	14
4	160	16
5	180	18

FIGURES

The following figures show the results of the analytical studies.

Figure 1: A graph showing the relationship between joint strength and behavior. The x-axis is labeled "Behavior (mm)" and the y-axis is labeled "Strength (kN)". The graph shows a series of data points that follow a linear trend, indicating a positive correlation between behavior and strength.

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Figure 2: A graph showing the relationship between joint strength and behavior. The x-axis is labeled "Behavior (mm)" and the y-axis is labeled "Strength (kN)". The graph shows a series of data points that follow a linear trend, indicating a positive correlation between behavior and strength.

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Figure 3: A graph showing the relationship between joint strength and behavior. The x-axis is labeled "Behavior (mm)" and the y-axis is labeled "Strength (kN)". The graph shows a series of data points that follow a linear trend, indicating a positive correlation between behavior and strength.

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Figure 4: A graph showing the relationship between joint strength and behavior. The x-axis is labeled "Behavior (mm)" and the y-axis is labeled "Strength (kN)". The graph shows a series of data points that follow a linear trend, indicating a positive correlation between behavior and strength.

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