



زانكۆی سه‌لاحه‌دین - هه‌ولێر  
Salahaddin University-Erbil

# **Experimental study on mechanical properties of tempered glass using Vickers hardness tester**

**A Research Project**

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**EXPERIMENTAL STUDY ON MECHANICAL PROPERTIES OF  
TEMPERED GLASS USING VICKERS HARDNESS TESTER**



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## **DEDICATION**

I dedicate my dissertation work to my family and many friends. A special feeling of gratitude to my loving parents, whose words of encouragement and push for tenacity ring in my ears they have never left my side and are very special.

- To my brothers, sisters, friends, and classmates who shared their words of advance and encouragement to finish this study.
- And lastly I dedicate to the almighty god, thank you for the guidance, strength, power of mind, protection, and skill and for giving us a healthy life.

All of these we offer to you.

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## SUMMARY

Tempered glass is widely utilized in various industries due to its enhanced mechanical properties compared to untreated glass. Understanding these properties, particularly hardness, is crucial for ensuring its effectiveness and safety in applications. This experimental study focuses on investigating the mechanical properties of tempered glass using a Vickers hardness tester. The methodology involves subjecting tempered glass specimens to controlled pressure through a series of indentations at different locations on the surface. Consistency was maintained by keeping load and dwell time constant throughout the testing process. Results from the Vickers hardness test provide valuable data on the material's resistance to deformation and ability to withstand external forces. The findings highlight the uniformity of hardness across the tempered glass surface, indicating the effectiveness of the tempering process in enhancing its mechanical strength. This study contributes to a better understanding of tempered glass properties, which is essential for its application in industries such as construction and automotive. Further research could explore additional factors influencing the mechanical properties of tempered glass, facilitating its optimization for diverse applications.

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