Journal of Structural Engineering & Applied Mechanics Volume 9 Issue 1 (2026) 703

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Journal of Structural Engineering & Applied Mechanics

Journal homepage: https://www.goldenlightpublish.com/journals/1/jseam

Erratum to "Enhancing axial load prediction of CFDST columns using machine learning models" [Journal of Structural Engineering & Applied Mechanics 8(2) (2025) 103-132]

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https://doi.org/10.31462/jseam.2026.703
DOI of the original article: https://doi.org/10.31462/jseam.2025.02103132
Received ---; Revised ---; Accepted ---; Available online 30 March 2026

This Erratum is issued to correct and clarify specific elements of the above-mentioned article in order to ensure full consistency between the manuscript text and the reference list, improve transparency regarding AI-assisted tool usage, and enhance the clarity of dataset description. As outlined in this document, the revisions concern four main sections of the article: **(i) Introduction, (ii) Database, (iii) Declaration of Generative AI and AI-assisted technologies, and (iv) References**. These corrections are limited to citation alignment, clarification of data sourcing, and refinement of disclosure statements, and **do not affect the scientific results, analyses, or conclusions of the study**.

The online version of the article has been updated accordingly, and this Erratum provides a transparent record of the changes.

The detailed corrections corresponding to each of these sections are presented below, with the revised passages provided in their updated form for clarity and traceability.

1. Introduction

Location in the original article:

Page 103, paragraph 2 and page 104, paragraph 1

Corrected text:

Building on this distinctive configuration, numerous studies have examined the mechanical performance of CFDST columns in detail. A key advantage is their superior behavior compared to traditional Concrete-Filled Steel Tubular (CFST) columns. The confinement provided by the inner tube significantly enhances the compressive strength and ductility of the concrete core. This not only increases the axial load capacity but also contributes to improved seismic performance, which is an essential consideration for structures in earthquake-prone areas [6-9]. CFDST columns are capable of efficiently dissipating seismic energy, thereby enhancing structural safety during dynamic loading events [10,11]. Furthermore, their reduced weight, attributable to decreased steel content compared to solid steel members, contributes to lower construction costs and facilitates transportation and on-site assembly [3,4].

CFDST columns also exhibit excellent fire resistance, which is a critical factor in structural designs. The concrete core between the steel tubes acts as a thermal barrier, protecting the inner and outer steel walls from excessive heat during fire exposure and preventing premature strength loss. Multiple experimental studies have confirmed that these columns retain a significant portion of their load-bearing capacity, even at elevated temperatures, reinforcing their reliability in fire-prone applications [12,13].

Location in the original article:

Page 105, paragraph 1

Corrected text:

Beyond fire resistance, ongoing research aims to better understand the behavior of CFDST columns under various loading conditions, including axial, lateral, and dynamic forces. Recent studies have examined the effects of variations in concrete strength, pipe geometry, and advanced reinforcement materials such as carbon fiber reinforced polymers (CFRP) on structural performance [14,15]. These studies have provided valuable insights that contribute to the refinement of design guidelines and structural codes, thereby ensuring more efficient and confident application of CFDST columns in future engineering projects.

Location in the original article:

Page 106, paragraph 1

Corrected text:

Despite the growing interest in concrete-filled double-skin steel tubular (CFDST) columns owing to their superior mechanical properties, several critical research gaps remain in the literature. These include a limited understanding of behavior under extreme conditions, particularly the combined effects of fire and seismic loading [6,31], and a lack of experimental validation for novel material configurations such as FRP-steel hybrids [19,32]. Furthermore, the absence of standardized design codes specific to CFDST systems [33], coupled with insufficient documentation on long-term durability and environmental performance [34], impedes broader adoption in structural applications. Sustainability-related aspects of CFDST materials also warrant further investigation to promote resilient and eco-conscious construction practices. Collectively, these gaps emphasize the urgent need for comprehensive predictive tools that not only enhance performance assessment but also support practical implementation.

2. Database

Location in the original article:

Page 106, paragraph 1

Corrected text:

The dataset used in this study consisted of 255 CFDST samples subjected to uniaxial compression [23,25,41-63]. These tests were performed using uniaxial compression testing machines equipped with sensors mounted on the specimens, allowing for automated data collection using a computer. Table 1 presents the nine key parameters utilized for modeling CFDST columns, which encompass the material strengths (concrete and steel), geometric characteristics (tube diameters and thicknesses), and axial load-bearing capacity.

Declarations

Location in the original article:

Page 127

Corrected text:

Use of generative AI and AI-assisted technologies

The author(s) confirm the author(s) did not use any AI tools in the preparation of this work/research/study.

References

Location in the original article:

Page 128, references 6 through 12

Corrected text:

[6] Hassan A, Bhat JA (2023) Behavior of partial-length stiffened and full-length stiffened CFDST columns under axial load. World Journal of Engineering 21(3):455–474.

[7] Wan J, Wang C, Liang J, Lin S (2023) Axial compression performance of concrete-filled double skin (SHS outer and CHS inner) steel tubular columns strengthened by CFRP. Advances in Structural Engineering 26(7):1276–1286.

[8] Ci J, Ahmed M, Tran V, Jia H, Chen S (2021) Axial compressive behavior of circular concrete-filled double steel tubular short columns. Advances in Structural Engineering 25(2):259–276.

[9] Wang YZ, Li BS (2014) Axial behavior of concrete-filled double skin steel tubular stub columns filled with demolished concrete lump. Applied Mechanics and Materials 556–562:671–674.

[10] Mohan A, Arathi S (2016) Non-linear analysis of concrete-filled double skin circular steel column. International Journal of Engineering Research and Technology 5(7). http://dx.doi.org/10.17577/IJERTV5IS070244.

[11] Dong CX, Ho JCM (2015) Theoretical model for double-skinned concrete-filled-steel-tubular columns with external confinement. Journal of Civil Engineering and Management 21(5):666–676.

[12] Heidarpour A, Zhao X (2019) Behavior of partially damaged concrete-filled double skin tubular stub columns under fire. In: Proceedings of the 17th International Symposium on Tubular Structures. Singapore.