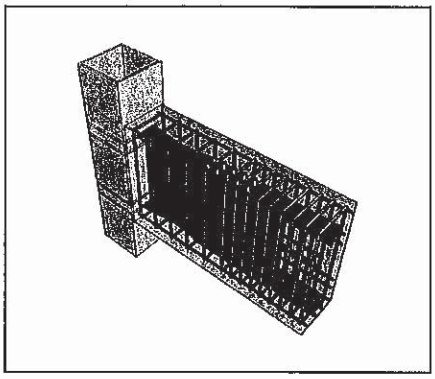
附件四、技術說明表

運用主筋續接之鋼骨鋼筋混凝土梁



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市場及需求:

本發明所屬技術為營建工程類中之梁結構，在高樓林立的現代生活中，尤其以台灣為例，除耐震需求外，製造成本及施工成本也為重量考量之一。本發明不僅符合耐震需求且也能同時達到節省製造成本及施工成本等市場需求。

技術摘要(含成果):

本發明所提出之主筋續接之鋼骨鋼筋混凝土(SRC)梁，與傳統鋼筋混凝土(RC)梁相比，其最大特色及發明重點為藉由 SRC 以及 RC 間之彎矩容量來設計一複合梁，利用主筋將彎矩傳遞至鋼翼板並再傳入鋼柱，而剪力部分則由腹板之剪力釘以及銲於鋼翼板上之主筋續接器因傳遞彎矩所產生之橫向力偶(couple)將混凝土之剪力傳遞至鋼腹板並再傳入鋼柱。

優勢:

本發明所提出之主筋續接之鋼骨鋼筋混凝土(SRC)梁，與傳統鋼筋混凝土(RC)梁相比能提高韌性及能量消散能力，與一般 SRC 梁相比則能減少製造及施工成本，結合兩種材料之優點並確保結構物之耐震能力。

競爭產品:

無

專利現況:

目前國內對於梁柱接頭專利僅限鋼梁之削弱以及加勁，尚未有學者提出本發明結合 SRC 與 RC 彼此優勢之相關技術專利。

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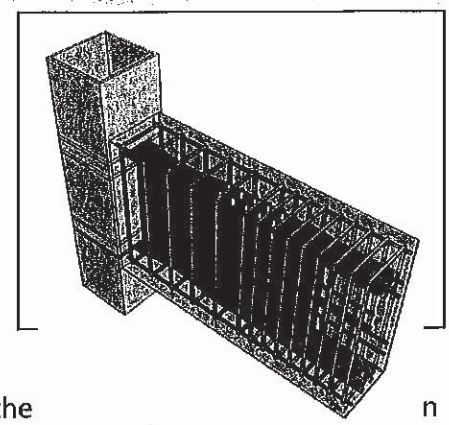
Steel-Reinforced Concrete Beams with Steel Rebar Splice



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Market Needs:

The technology to which this invention belongs falls under the n structural engineering. This invention not only meets seismic requirements but also addresses market demands for cost-effective manufacturing and construction, thereby contributing to savings in both manufacturing and construction costs.

Our Technology:

The invention proposes a Steel-Reinforced Concrete (SRC) beams with steel rebar splice. Compared to traditional Reinforced Concrete (RC) beams, its key feature lie in designing a composite beam utilizing the bending capacity between SRC and RC. By utilizing steel rebars to transfer bending moments to the steel flange and subsequently to the steel column, and by transferring shear forces through shear studs in the web and through steel rebars continuation devices welded to the steel flange, the lateral shear forces generated by bending moments are transmitted to the steel web and further to the steel column.

Strength:

The invention of the SRC beams with steel rebar splice enhances ductility and energy dissipation capacity compared to traditional RC beams. Additionally, it reduces manufacturing and construction costs compared to general SRC beams, combining the advantages of both materials while ensuring seismic resilience of the structure.

Competing Products:

No

Intellectual Properties:

Currently, domestic patents related to beam-column joints only involve weakening and strengthening of steel beams, with no scholars proposing relevant patented technologies that combine the advantages of SRC and RC as presented in this invention.

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