عنوان فارسی مقاله:
راه حل‌هایی برای جلوگیری از شکست اعضای بتن مسلح تحت بارهای انفجار نزدیک

عنوان انگلیسی مقاله:
Alternatives to prevent the failure of RC members under close-in blast loadings

توجه!
این فایل تنها قسمتی از ترجمه می‌باشد. برای تهیه مقاله ترجمه شده کامل با فرمت ورد (قابل ویرایش) همراه با نسخه انگلیسی مقاله، اینجا کلیک نمایید.
5. Conclusions

Two strategies of protection against blast loading for RC columns are designed and studied: classical steel jacketing and a new composite material of crushable reinforced polyurethane. The mitigation of shock and energy absorption under blast loading conditions is studied using experimental methods. For comparison purposes, a RC member without protection is also tested and studied.

As expected, the steel jacketing protection presents excellent behavior and shows the best results. The maximum final deflection was lowered by almost 60%. Consequently, there was less damage to the member and obviously, it can be inferred that this member has a higher residual capacity, preventing progressive collapse.

On the other hand, the proposed reinforced polyurethane protection presented reasonably good behavior. It reduced the maximum final deflection by more than 20%. The damage in the member was also significantly reduced. In order to have better distributed energy dissipation, a possible improvement could be to have higher density bricks near the blast load while the bricks further away have lower density. It should be noted that this protection is cheaper and lighter than steel jacketing.