



CT
Innovations



TT-W003

Introduction to TOUGH Support Savings:

TOUGHTray





1.0 ABSRACT

Delivering a cable tray project profitably by achieving the schedule timeline to budget is challenging. At CT Innovations we understand the challenges and believe in minimizing cable tray project risk and maximizing our customers project profitability.

TOUGH Support Savings represents CT Innovations portfolio of project optimization recommendations. Derived from years of experience working alongside end users, EPC's, consultants, distribution and cable tray installers, CT Innovations has developed new cable tray systems and solutions focused solely on delivering customer value.

Featuring recommendations for:

- Civil Structure & Design
- Installation & Construction
- Inspection & Assurance
- Procurement & Expediting

Solutions that mitigate numerous constraints and critical path risks to deliver projects on schedule and budget.

TOUGH Support Savings manufacturer recommendations from CT Innovations are fully compliant with both NEMA VE 1 and NEMA VE 2 industry standards and supersede traditional industry standard practices.

Einstein himself said "insanity is doing the same thing over and over and expecting different results" Industry standard practices for cable tray system design and installation are in many cases just that. To overcome specific project challenges a new approach is needed, one that is based on innovative solutions that apply to specific project needs, from cable tray system design through installation and commissioning. TOUGH Support Savings are just that, manufacturer recommendations to use innovative solutions that save time, resources and money while mitigating project schedule risks. Something different, something new for better results.

2.0 INTRODUCTION

National energy security and environmental concerns are driving the energy transition, while societies adoption of new data technology is driving increased demand for products and services. These combined needs are driving increased demand for new electrical infrastructure which the construction industry must deliver against a backdrop of market constraints such as the availability and cost of product, labor and materials.

In the competitive landscape of industrial and commercial construction projects, the cable tray systems design and installation methods can significantly impact project success. Reducing design complexity while increasing construction and installation efficiency is crucial for meeting tight completion deadlines and mitigating critical path risks. This paper explores the TOUGH Support Savings recommendation portfolio. We review how it correlates to specific cable tray applications and how manufacturer recommendations and solutions can deliver better results.

It is important that early consideration be given to cable tray systems design and installation recommendations.

Ideally this should be considered and evaluated during project front end engineering design and contract award.

3.0 CIVIL STRUCTURE & DESIGN

TOUGH Support Savings provides a comprehensive portfolio of manufacturer recommendations for the efficient design and location of structural tray supports. With structural design, fabrication and erection presenting significant project costs, the manufacturer recommendations provide:

- a) 33% to 100% reduction in structural tray support quantity.
- b) 25% to 100% increase in structural support location design flexibility.
- c) 50% project cost savings when compared to industry standard practice.

Refer to the following technical information related to TOUGH Support Savings civil structural design:

- d) TT-W005 : TOUGHTray Systems Structural Design Efficiency
- e) CTI-TSS-TT-001 : Manufacturer Recommendations TOUGHTray Structural Design
- f) TOUGH Support Savings Calculator

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4.0 INSTALLATION & CONSTRUCTION

TOUGH Support Savings provides a comprehensive portfolio of manufacturer recommendations for the efficient installation and construction of cable tray systems. With cable tray installation and construction presenting significant project costs, the manufacturer recommendations provide:

- a) Factory pre-installed link connectors (eliminate splice plates)
- b) 50% to 75% reduction in tray system hardware.
- c) 50% to 90% reduction in tray cover fixing materials and installation time.
- d) 100% increase in tray site adaptability, modular assembly and connectivity.
- e) 50% tray installation cost savings when compared to industry standard practice.

Refer to the following technical information related to TOUGH Support Savings installation and construction:

- f) TT-W006: TOUGHTray Systems Installation Efficiency
- g) TT-I-01_A01 : TOUGHTray Installation Linking & Accessories
- h) TOUGH Support Savings Calculator

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5.0 INSPECTION & ASSURANCE

TOUGH Support Savings provides a comprehensive portfolio of manufacturer recommendations for the efficient inspection and review of cable tray systems quality and assured performance. With cable tray construction and installation presenting quality assurance and inspection challenges, the manufacturer recommendations provide:

- a) Modular mechanical tray construction (eliminates all welding, weld NDT, heat staining, black smoke)
- b) Set 1" expansion gap every time at all times of installation (guaranteed thermal dynamic tray performance)

Refer to the following technical information related to TOUGH Support Savings installation and construction:

- a) TT-I-01_A01 : TOUGHTray Installation Linking & Accessories
- b) CTI-TSS-TT-001 : Manufacturer Recommendations TOUGHTray Structural Design

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6.0 PROCUREMENT & EXPEDITING

TOUGH Support Savings manufacturer recommendations optimize the cable tray systems material quantities, so you quantify less and buy less for your project. TOUGH Support Savings Calculator quickly analyzes the cable tray BoM, identifies and summarizes significant material and resource cost savings. Savings that should be considered when determining the actual project cost of a cable tray system and its true project value. CT Innovations provide a comprehensive range of tools for the efficient quantification of cable tray systems, our e-commerce portal provides:

- a) Bill of material quotation builder : quantify, estimate and price quicker.
- b) Submittal drawing builder : automated and downloadable with one click.
- c) Instant project order tracking : real time order tracking anytime you need it.
- d) Optimized savings calculator : calculate material, cost and time savings.

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<https://www.toughinnovations.com/resources>

7.0 PROJECT OPTIMIZATION & MITIGATING CRITICAL PATH RISKS

TOUGH Support Savings provides a comprehensive portfolio of manufacturer recommendations for the efficient design and installation of cable tray systems. With cable tray system design, construction and installation presenting significant critical path risks, the manufacturer recommendations provide:

- a) Structural engineering hours and design resource savings
- b) Structural raw material, fabrication and erection cost savings
- c) Structural materials handling and logistic cost savings
- d) Tray system installation materials and time savings

Refer to the following technical information related to TOUGH Support Savings installation and construction:

- c) TT-W003 : TOUGHTray Systems Mitigating Critical Path Risks
- d) CTI-TSS-TT-001 : Manufacturer Recommendations TOUGHTray Structural Design

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8.0 SUMMARY

TOUGH Support Savings was developed and is provided to help customers optimize the cable tray system from design through installation. By reducing design time, engineering resources, raw materials, material handling and logistic costs and installation time, simplify inspection and quality assurance while mitigating critical path risks. The true cost of a cable tray system is not the price on a quotation, but the multiple factors that make up the total installed cost of the system. It is recommended these are adequately considered when evaluating the best value.



Mark Vincent Bowman
Chief Specification Officer
CT INNOVATIONS