

# Industrial Manufacturing Plant Case Study

*Expert analysis and opinions related to  
construction management execution  
and claimed financial damages*



# Dispute

A global metals manufacturer—based in Europe—engaged a European contractor to provide engineering and construction services for a new manufacturing plant to be located in the United States. A U.S.-based mechanical contractor received a subcontract for work scope related to mechanical, pipe, and equipment work.

Throughout the project, the mechanical subcontractor claimed it encountered multiple challenges during the execution of its work, resulting in additional costs beyond those accounted for in the lump-sum contract. Among the challenges the mechanical subcontractor alleged were shortages in the local labor pool, ineffective change management practices, delays to the project schedule, miscellaneous cost overruns, and late/out-of-sequence receipt of equipment. The U.S. subcontractor also alleged that the engineering and construction management practices of the European contractor were not in line with standard industry practices encountered in the U.S.

The contractor rejected the subcontractor's claims for compensation beyond the lump-sum contract amount, stating that any additional costs incurred by the subcontractor were a direct result of the subcontractor's own management of its scope of work.

## PROJECT

800,000 SF Steel  
Manufacturing Plant

\$975MM Total Project Cost

## SUBCONTRACT

\$20MM Lump Sum Turnkey

## PRIMARY ISSUES

Schedule Delays

Lost Labor Productivity

Disputed Change Orders





# Approach

Counsel for the contractor retained Interface to analyze the issues and claimed damages related to construction management, labor productivity, schedule delay, and outstanding payment issues.

## **LABOR PRODUCTIVITY ANALYSIS**

Interface investigated the subcontractor's allegations of lost labor productivity, assessing the accuracy and validity of the measured mile, MCAA Factors, and earned value methodologies used to quantify the alleged labor productivity losses. Interface developed a timeline of events/issues that contributed to labor productivity losses and determined the root causes through analyses of contemporaneous project documents. Ultimately, Interface found flaws in the subcontractor's labor productivity calculations and determined the lost labor productivity was a result of the subcontractor's mismanagement of its labor force, mishandling of onsite material/equipment, and substandard workmanship.

# Approach

## CPM SCHEDULE ANALYSIS

Based on the baseline schedule and periodic schedule updates, Interface divided the project into discrete time periods, or “windows.” Within each window, Interface analyzed the project critical path to determine the total delay experienced during the corresponding time period. Interface then analyzed contemporaneous project documents to determine the root causes for each delay and allocated the delay days to the responsible party. Based on this analysis, Interface determined that the subcontractor’s inefficient labor, lag between material procurement and construction, and rework due to poor workmanship were the primary contributors to the critical path delays. Interface also identified delays due to the contractor supplying material and equipment; however, these procurement delays were largely concurrent with the subcontractor-caused delays, which were not assessed against either party.

Description	Milestone Completion Date	Finish	Days Late	2014						2015						
				J	A	S	O	N	D	J	F	M	A	M	J	J
Area 01	N/A	7/10/2015	N/A													
Area 11-1	12/22/2014	5/15/2015	144													
Area 21	1/31/2015	5/30/2015	119													
Area 31-1	1/31/2015	7/4/2015	154													
Area 31-2	Descoped 1/8/15															
Area 41-1	1/31/2015	7/8/2015	158													
Area 41-2	Descoped 1/8/15															
Area 51-1	Descoped 2/12/15															
Area 51-2	Descoped 2/12/15															
Area 61-1	Descoped 1/8/15															
Area 61-2	Descoped 1/8/15															
Area 71-1	1/31/2015	7/10/2015	160													
Area 71-2	Descoped 1/8/15															
Area 81	12/22/2014	7/9/2015	199													
Area 11-2	Descoped 12/30/14															
Area 12	Descoped 12/30/14															
Area 13	1/31/2015	5/15/2015	104													



# Outcome

## EXPERT TESTIMONY

Interface provided expert testimony at deposition; later, Interface once again provided expert testimony during the arbitration hearing. Interface's expert testimony primarily pertained to the root causes of the labor productivity losses and schedule delays, as well as the validity of the outstanding contract invoices.

## JUDGEMENT

The arbitration panel issued a "reasoned decision," which required Interface's client, the contractor, to pay the subcontractor only for acceptable work performed under the contract included in the valid invoices. The arbitration panel denied the subcontractor's claims for damages related to lost labor productivity and schedule delays.

