From microbiologists to marketers, everyone’s got their own idea (and jokes) about how an engineer thinks. How about this one? You’re an optimist if you think the chocolate storage tank is half full and a pessimist if you think the tank is half empty, but you’re a candy engineer if you think a half-filled tank of chocolate is just overdesigned.

Just how does an engineer think about things and why is that important to confectionery manufacturing? One of the best definitions of an engineer is someone who can make decisions and design things knowing only half of what she needs to know. There is often no right answer, only the optimal one for a given situation — engineers are trained to find that solution. Here, some of the important characteristics of a candy engineer will be developed.

What distinguishes an engineer from lawyers and business people, and even most scientists? In part, it’s the training; the topics covered in engineering coursework lay the foundation. However, it goes well beyond the subject matter to a way of thinking that’s, in part, self-selected and, in part, bred through training methods throughout the engineering curriculum.

Before talking about the traits of an engineer, we need to recognize that there are numerous types of engineers, each with a different set of skills. There are agricultural, civil, electrical, mechanical, chemical, industrial and even nuclear engineers. Each of these engineering types brings unique aspects to the candy factory (well, maybe not the nuclear engineer), but there are some commonalities based on how engineers are trained. Let’s compile these skills into what we’ll call the candy engineer so we can look specifically at how an engineer in a candy factory might think. To narrow things down a little, we’ll lean somewhat towards the bailiwick of the chemical engineer, someone who’s interested most in the processes, although we’ll include some aspects of the mechanical engineer, who would be most interested in designing the equipment.

For sake of argument, let’s say that our candy engineer has a classic process engineering training. That would mean she was trained with a cross between a chemical