Supply Chain Management is an unity of production activity and process start from raw material obtained from supplier, value added process (production) which changing raw material become finished goods, depository process (inventory), and delivery process of the finished goods to customer. All the unity strived in order to increase the customer satisfaction. Applying the concept of Supply Chain can improve performance of company. To assess and control the performance of Supply Chain, we need to design a Performance Measurement System of Supply Chain matching with the condition of company. This research aim to design a Performance Measurement System of Supply Chain and apply the System mentioned as process evaluation to the company performance. Identify Key Performance Indicator obtained from the framework of Supply Chain Operations Reference (SCOR) which introduced by Supply Chain Council (SCC). There are 23 Key Performance Indicators divided into five basic management process of Supply Chain that is Plan, Source, Make, Deliver, and Return. Using concept of Analytical Hierarchy Process (AHP) obtained weight for each perspective that is Plan (0.295), Source (0.464), Make (0.131), Deliver (0.066) and Return (0.044). Implementation phase identify the attributes of each Key Performance Indicators later then conduct the measurement of performance to each Key Performance Indicators. Scoring System using normalization process of Snorm DeBoer later then continued with analysis of Traffic Light System to know achievement of performance through tricolor (red, yellow, and green) as indicator. Results of the implementation, there are two Key Performance Indicators which have low performance which need repair priority that is Accuracy of Forecast Techniques and Product Failure in Sealing Process. This research also gives some repair suggestion to increase the performance both of those Key Performance Indicators.

**Keyword:** Performance Measurement, Supply Chain, SCOR, Analytical Hierarchy Process